FINAL

ENVIRONMENTAL ASSESSMENT

JTF-6 BORDER ROAD IMPROVEMENT PROJECT COLUMBUS, NEW MEXICO

Prepared for:
JOINT TASK FORCE SIX
FORT BLISS, TEXAS

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) assesses the potential for significant adverse or beneficial environmental impacts of the proposed action and alternatives in accordance with provisions of the National Environmental Policy Act (NEPA). The proposed action is located in Luna and Hidalgo Counties, New Mexico (NM) near the city of Columbus, which is approximately 60 miles west of El Paso, Texas (TX) and 30 miles south of Deming, NM. The proposed action consists of improving 75 miles of soil/gravel road and installing single-bar (guardrail type) vehicle barriers in strategic locations along approximately 50 miles of the border road. This document is tiered from the Programmatic Environmental Impact Statement (PEIS) completed for Joint Task Force Six (JTF-6) activities along the U.S.-Mexico border (U.S. Army 1994). The PEIS was prepared in 1994 for the Immigration and Naturalization Service (INS) and JTF-6 to address the potential impacts of proposed projects that would facilitate law enforcement agencies (LEAs) missions to reduce illegal drug activity along the southwestern border of the U.S. The PEIS addresses the cumulative effects of past and reasonably foreseeable projects undertaken by JTF-6 for numerous LEAs in the four southwestern states (Texas, New Mexico, Arizona, and California).

Cooperating agencies involved with the proposed action include the U.S. Border Patrol and JTF-6. The U.S. Border Patrol, El Paso Sector, has requested support from JTF-6 through Operational Alliance for the use of military personnel and equipment to complete the proposed action. JTF-6 contracted the Fort Worth District, U.S. Army Corps of Engineers to assess the potential for impacts related to proposed road improvements. Improvement of roads along the border is critical to successful interdiction of narcotics and apprehension of narcotics traffickers. The proposed action would increase the U.S. Border Patrol's ability to complete their mission of reducing illegal drug traffic into the U.S. Allowing military units to perform the construction will provide them realistic training in deployment, redeployment and construction operations as required by their respective mission essential training elements.

The project is divided into two phases. Phase I consists of improving approximately 30 miles of road, 15 miles on either side of the Columbus port of entry (POE). Phase I improvements are tentatively scheduled to begin in February 1999 and would continue through March. Phase II will begin at Johnson's Ranch gate, which is approximately 15 miles west of the POE, and continue west to International Boundary and Water Commission (IBWC) Monument 40. Phase II road then turns south at IBWC Monument 40 and continues for approximately 30 miles to Corner Well near IBWC Monument 52. Commencement of Phase II road improvements has not yet been scheduled.

The 52nd Combat Engineer Battalion (Heavy) would complete construction for Phase I. The Marine Wing Support Squadron (MWSS) 472 unit will also offer support during construction. Additionally, follow up units may be necessary to complete the total action. Troops will bivouac in an open field area located on State Route 9 approximately 1.2 miles west of the intersection with State Route 11. Biological and Archaeological surveys will be conducted before any activities occur at this bivouac site to ensure all scientific resources are avoided. A military engineering unit has not yet been assigned for Phase II.

Alternatives considered included no action, the proposed action described above, and two others (including increased air patrols, and increased numbers of vehicles and agents) that were eliminated from detailed analysis primarily due to cost. The no action alternative would not

facilitate the U.S. Border Patrol mission to reduce illegal drug activities along the border. Of the alternatives considered, the proposed action would be most compatible with the U.S. Border Patrol mission.

Implementing the proposed action would result in clearing 18 to 73 acres of common vegetation depending on final engineering design. Given the fact the region encompassing the project area is undeveloped and the impacts to vegetation would be spread over a 75-mile corridor, the amount of clearing would be insignificant. Additionally, no threatened or endangered species or critical habitat were observed within the project area during field surveys. After road improvements are completed, areas surrounding the road would be allowed to revegetate. Potential soil erosion and related surface water runoff impacts are possible during construction efforts of the proposed action. Procedures and methods that should be implemented to mitigate impacts to soils and surface water resources have been developed in the Storm Water Pollution Prevention Plan (PPP) for the proposed action. Recommendations outlined in the PPP would reduce soil erosion due to surface water runoff from the proposed project area to receiving drainages. Potential adverse impacts to cultural resources by proposed construction activities would be mitigated by avoidance and monitoring of those resources.

There would be no significant adverse affects to the natural environment associated with the proposed projects. The proposed action would not significantly impact area soil, land use, water resources, air quality, biological resources, cultural resources, or socioeconomic resources. The proposed action would not affect any listed or species proposed for listing as threatened or endangered in accordance with the Endangered Species Act.

FINDING OF NO SIGNIFICANT IMPACT

JTF-6 BORDER ROAD IMPROVEMENTS
COLUMBUS, NEW MEXICO

The primary purpose of the proposed action is to assist in fulfilling the U.S. Border Patrol's mission to reduce illegal drug trafficking along the border by increasing their ability to patrol the Columbus, New Mexico area. The proposed action would include improvements to approximately 75 miles of border road and installation of vehicle barriers in strategic locations along approximately 50 miles of the same road by Joint Task Force Six (JTF-6), near Columbus, New Mexico. Proposed road construction activities would occur within a 60 foot right-of-way north of the U.S.-Mexico border.

The 52nd Combat Engineer Battalion (Heavy) would complete construction for Phase I which is tentatively scheduled to begin in mid-February 1999 and would continue through March. The Marine Wing Support Squadron 472 (MWSS) will also offer support during construction. Additionally, follow up units may be necessary to complete the total action. Troops will bivouac in an open field area located on State Route 9 approximately 1.2 miles west of the intersection with State Route 11. Biological and Archaeological surveys will be conducted before any activities occur at this bivouac site to ensure all scientific resources are avoided. An engineering unit has not been assigned for Phase II.

Alternatives considered included no action, the proposed action described above, and two others (including increased air patrols, and increased numbers of vehicles and agents) that were eliminated from detailed analysis primarily due to cost. The no action alternative would not facilitate the U.S. Border Patrol mission to reduce illegal drug activities along the border. Of the alternatives considered, the proposed action would be most compatible with the U.S. Border Patrol mission.

A Programmatic Environmental Impact Statement (PEIS) was prepared in 1994 for the Immigration and Naturalization Service (INS) and JTF-6 proposed projects that facilitate law enforcement agencies (LEAs) missions to reduce illegal drug activity along the southwestern border of the U.S. The PEIS addresses the cumulative effects of past and reasonably foreseeable projects undertaken by JTF-6 for numerous LEAs in the four southwestern states (Texas, New Mexico, Arizona, and California). The EA for the proposed action is tiered from the PEIS completed for JTF-6 and INS activities along the U.S.-Mexico border (U.S. Army 1994). Cooperating agencies involved with the proposed action include the U.S. Border Patrol and JTF-6.

No significant adverse affects to the natural or human environment are expected with implementing the proposed action. In addition, no adverse effects to Federally protected threatened/endangered species or habitats are expected. Based upon the results of the EA and the environmental design measures to be incorporated as part of the proposed action, it has been concluded that the proposed action will not have a significant adverse effect on the environment.

Dorian T. Anderson
Brigadier General, U.S. Army
Commander

29 Jan 1999
Date

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1.0 INTRODUCTION

1.1 Background

The U.S. is experiencing high levels of drug use and increasing amounts of drug-related crime. Negative impacts of widespread drug use on society continue to affect the work force, educational system, general law and order, and traditional family values and structure. Rising rates of violent crime, serious damage to the Nation's health and economy, and strains on vital relationships with international allies led the U.S. Congress to develop the National Drug Control Strategy (NDCS) and Department of Defense (DoD) involvement. The Secretary of Defense established Joint Task Force Six (JTF-6) in November 1989 to coordinate all DoD counterdrug support to Federal, state and local law enforcement agencies (LEAs) in their efforts to curtail drug smuggling activities into the United States border region and protect National security. JTF-6 assistance to LEAs includes general, operational, and engineering efforts provided there is a nexus to drug interdiction and the assistance would provide all or part of the mission-essential training elements of the military unit involved.

JTF-6 recently received a support request from the U.S. Border Patrol (USBP), El Paso Sector, through Operation Alliance to improve approximately 75 miles of soil/gravel road (Figure 1-1) that parallels the U.S.-Mexico border near Columbus, New Mexico (NM). The USBP also requested that vehicle barriers be installed parallel to the road along approximately 50 miles of border road in strategic locations of intense drug trafficking. This Environmental Assessment (EA) addresses potential impacts associated with the proposed road improvements.

1.2 Location of the Proposed Action

The proposed action is located in Luna and Hidalgo Counties, NM near the city of Columbus (Figure 1-1), which is approximately 60 miles west of El Paso, Texas (TX) and 30 miles south of Deming, NM. The proposed action consists of improving 75 miles of soil/gravel road and installing single-bar (guardrail type) vehicle barriers in strategic locations along approximately 50 miles of the border road.

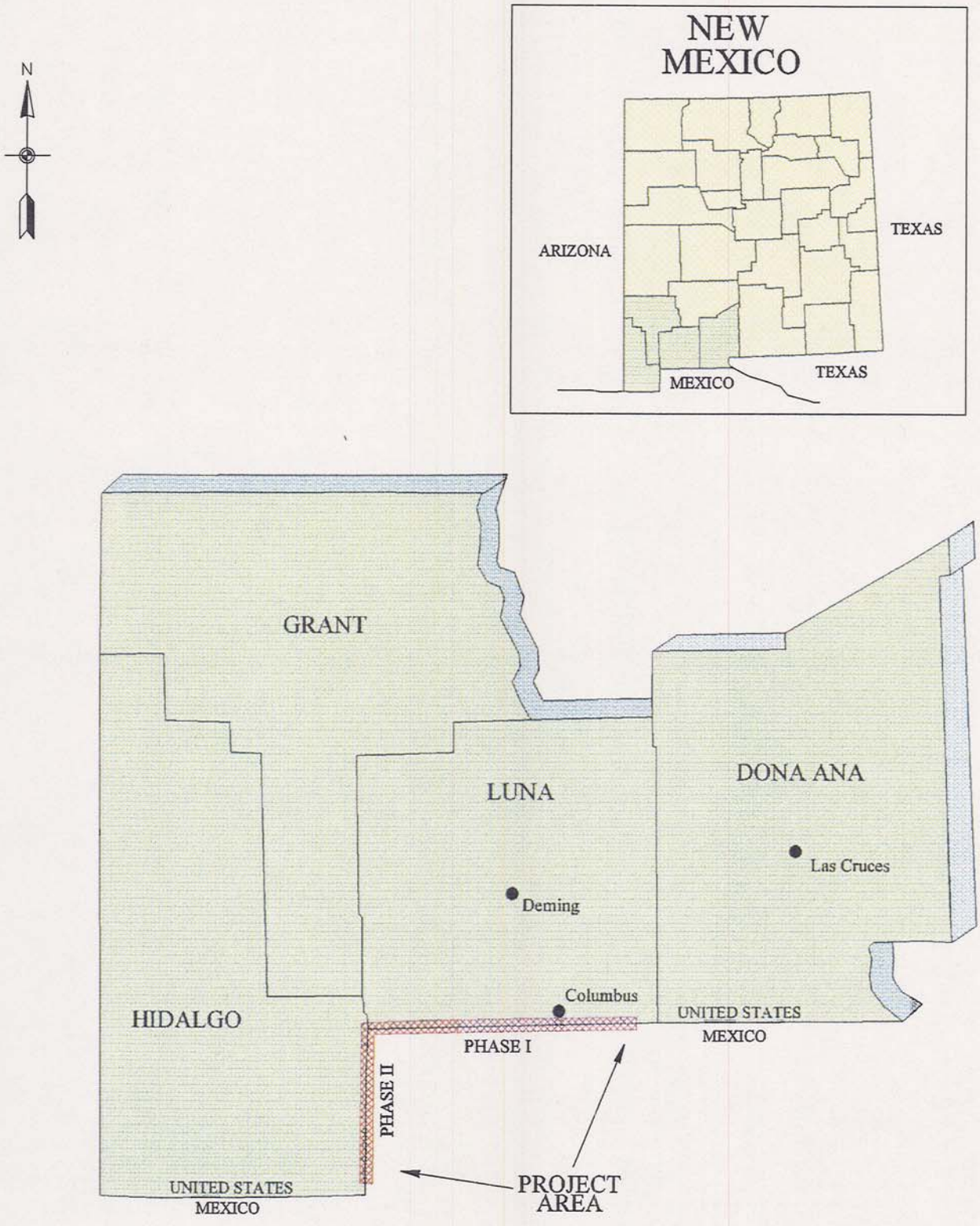

Figure 1-1. General location of border road improvements near Columbus, New Mexico

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SCALE	NOT TO SCALE
DATE:	NOVEMBER 1998

1.3 Purpose and Need

Road improvements along the border are critical to successful interdiction of narcotics and apprehension of narcotics traffickers. During fiscal year 1998, USBP agents in the Deming, NM border patrol station seized over 8,500 pounds of marijuana valued at over $6.8 million. Agents also confiscated 38 vehicles used for drug trafficking valued at over $150,000. Assaults on agents have increased significantly as attempts to move narcotics across the border have increased; the proposed project is needed to help ensure agent safety. Roads in the project area are currently rough, and almost impassable in places requiring the use of four-wheel drive vehicles. Vehicular access would be improved by repairing and upgrading these existing roads. In addition to access problems, the rough condition of the roads and poor drainage increases the frequency of vehicle maintenance, and contributes to soil erosion. Vehicle barriers are also needed in strategic locations that have a high incidence of drug trafficking through the use of vehicles. Certain portions of the fence are repeatedly cut or knocked down due to trafficking activities. Single-bar (guardrail type) vehicle barriers would eliminate vehicle crossings in these areas. The completion of this work would enhance the USBP's ability to interdict drug traffickers.

The proposed action would not only provide aid to the USBP, but would serve a dual purpose in providing training opportunities for the 52nd Combat Engineer Battalion (Heavy) and Marine Wing Support Squadron 472 (MWSS) personnel in deployment and redeployment, logistics and design planning, and construction. Support provided to the U.S. Border Patrol from the U.S. military and JTF-6 during this project would involve aid in improving the condition of border road to enhance drug interdiction activities.

1.4 Applicable Environmental Statutes and Regulations

This EA was prepared for the U.S. Army Corps of Engineers (USACE), Fort Worth District, in accordance with, but not limited to, the National Historical Preservation Act of 1966, as amended; the Archeological and Historical Preservation Act of 1974, as amended; the National Environmental Policy Act of 1969 (NEPA); Endangered Species Act of 1973, as amended; Army Regulations 200-2, and 200-4; Executive Order (E.O.) No. 11593, "Protection and Enhancement of the Cultural Environment"; E.O. No. 11988, "Flood Plain Management";

E.O. No. 11990, "Protection of Wetlands"; and E.O. 12898 "Environmental Justice." Table 1-1 summarizes the pertinent environmental requirements that guided the development of this EA.

Table 1-1

Applicable Environmental Statutes and Regulations

Environmental Regulation
Federal Statutes
Archeological and Historic Preservation Act
Clean Air Act, as amended
Clean Water Act, as amended
Endangered Species Act, as amended
Federal Water Project Recreation Act, as amended
Land and Water Conservation Fund Act, as amended
Migratory Bird Treaty Act
National Historic Preservation Act, as amended
National Environmental Policy Act, as amended
Watershed Protection and Flood Prevention Act
Wild and Scenic Rivers Act, as amended
Farmland Protection Policy Act
Native American Graves Protection and Repatriation Act
Executive Orders, Memorandums, etc.
Flood Plain Management (E.O. 11988)
Protection of Wetlands (E.O. 11990)
Environmental Effects Abroad of Major Federal Actions (E.O. 12114)
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (E.O. 12898)

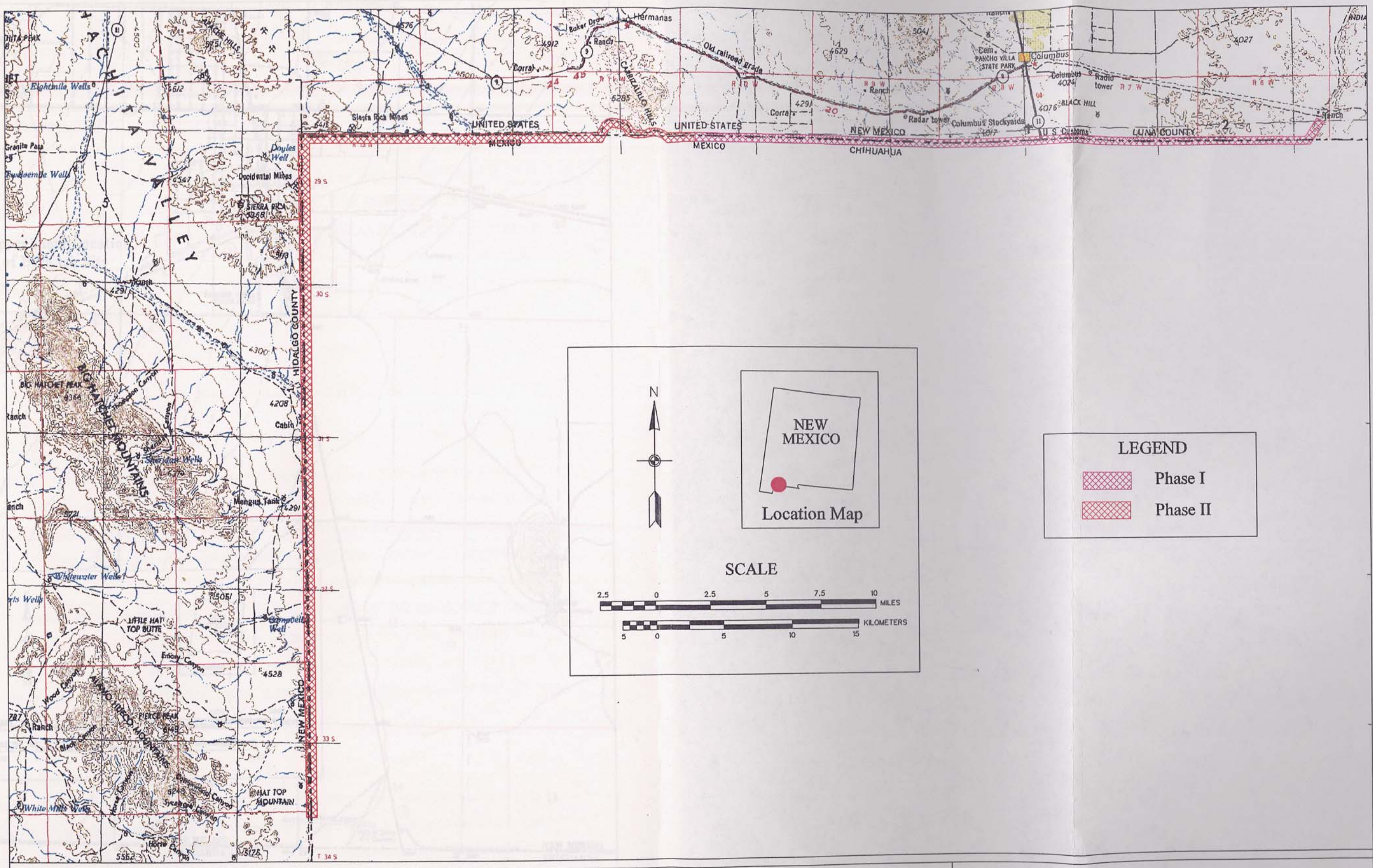

Figure 2-1: Location of proposed Phase I and Phase II construction activities near Columbus,New Mexico

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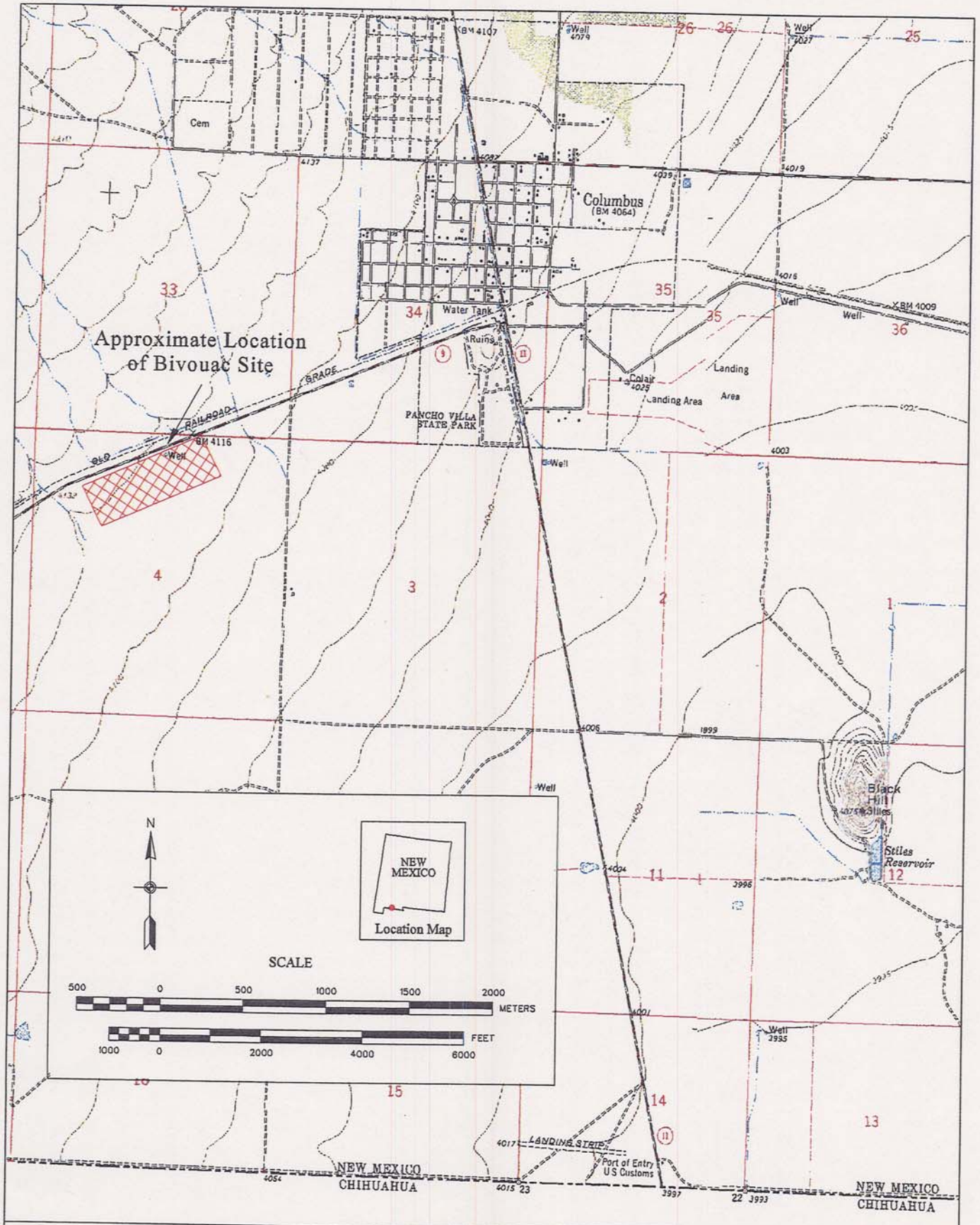

Figure 2-2: General location of the proposed bivouac site near Columbus, New Mexico

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equipment, including graders, front-end loaders, and generators, would be used during the construction period.

2.2 No Action

The alternative would involve the use of existing road without any improvements or installation of vehicle barriers. Although no significant adverse impacts would occur if implemented, the no action alternative would not increase USBP effectiveness in reducing drug smuggling and trafficking near Columbus. Drug traffickers would still be able to drive across the border in certain locations, vehicle maintenance costs would continue to be significant for the USBP, and drainage along the border road would not be improved. In addition, without proper improvement measures, erosion and consequential sedimentation, may increase along the road.

2.3 Alternatives Considered but Eliminated from Detailed Analysis

2.3.1 Increase Air Patrols

Air Patrols could be increased to spot narcotics traffickers while USBP agents would utilize existing roads and trails to make apprehensions. Helicopters and fixed winged aircraft patrols could be utilized more heavily in the area. While increased air patrols would likely improve spotting of narcotics smugglers, follow-up tracking of smugglers would not be improved. Aircraft cannot track smugglers efficiently since they are restricted to altitudes above 500 feet. Also, many smugglers travel under the cover of darkness when aircraft would have difficulty spotting movement on the ground. Helicopters are more capable of tracking smugglers but their range is too confined and the cost of increased operation is too high. Increased air patrols may aid in drug interdiction activities, but not to the extent of the proposed action and at a cost that is prohibitive.

2.3.2 Increase Number of USBP Agents and Vehicles

Increasing the number of USBP agents monitoring the border near Columbus would reduce the amount of illegal drugs smuggled across the border by creating a larger, more available force for monitoring and apprehending persons attempting to illegally enter the U.S. Additionally, more agents along the border would provide a more visible force that may decrease the apparent accessibility to the U.S. by illegal drug smugglers. However, the increase in

expenditures required to expand the number of agents, vehicles, increased maintenance required to attain the same efficiency of drug interdiction is too costly compared to the proposed action. In addition, associated increase in traffic along the border due to such an expansion would pose a greater threat to biological resources of the project are through increased vehicular traffic (i.e., increased vehicle emissions, increased fugitive dusts, increased erosion and secondary effects associated with increased run-off, increased vehicular collisions with wildlife, etc.).

3.0 AFFECTED ENVIRONMENT

3.1 Land Use

Land directly adjacent to the border is mainly undeveloped throughout the project area. Two USBP stations are responsible for monitoring this section of border. The Columbus, New Mexico/Palomas, Mexico POE is located on the border three miles south of Columbus and consists of one main building. A small landing strip is located near the POE, in addition to a few maintenance buildings. Undeveloped land is primarily used for ranching or agriculture with a small portion (approximately five miles) of the Big Hatchet State Game Refuge overlapping the project area in the Boot Heel region between Cabin Well and Corner Well. There are also two mining operations (International Mine [also referred to as the Sierra Rica Mine], and Occidental Mines) within the project area. International Mine is abandoned, but Occidental Mines are still operational. An unimproved soil/gravel road runs along the border throughout the entire project limits. Photographs of representative sites taken during recent surveys along the project corridor are presented in Appendix A.

3.2 Vegetation

Vegetation in this area is typical of Chihuahuan desert scrub as described by Brown (1994). Dominant plant species are creosotebush (*Larrea tridentata*), mesquite (*Prosopis glandulosa*), tarbush (*Flourensia cernua*), and saltbush (*Atriplex canescens)*. Other vegetation occurring to a lesser extent within the project area included cholla (*Opuntia* sp.), yucca (*Yucca* sp.), agave (*Agave* sp.), and ocotillo (*Fouquieria splendens*). For the purposes of this report, five vegetation types were designated for the entire project area based on presence of dominant species. These include Creosote-Tarbush, Mesquite-Creosote, Sotol-Ocotillo-Opuntia, AG (agriculture), and Developed. The general location of these communiteis is depicted on Figure 3-1. Vegetation density of the project area is generally very low (less than 10 percent), with the highest vegetation density (50 to 60 percent) occurring in the Creosote-Tarbush communities.

Narrow bands of grassland communities occurred within some small washes or drainages. Some of these broadened into wide expansive communities north of the border, but out of the immediate project area. Common species comprising this community type included tobosa

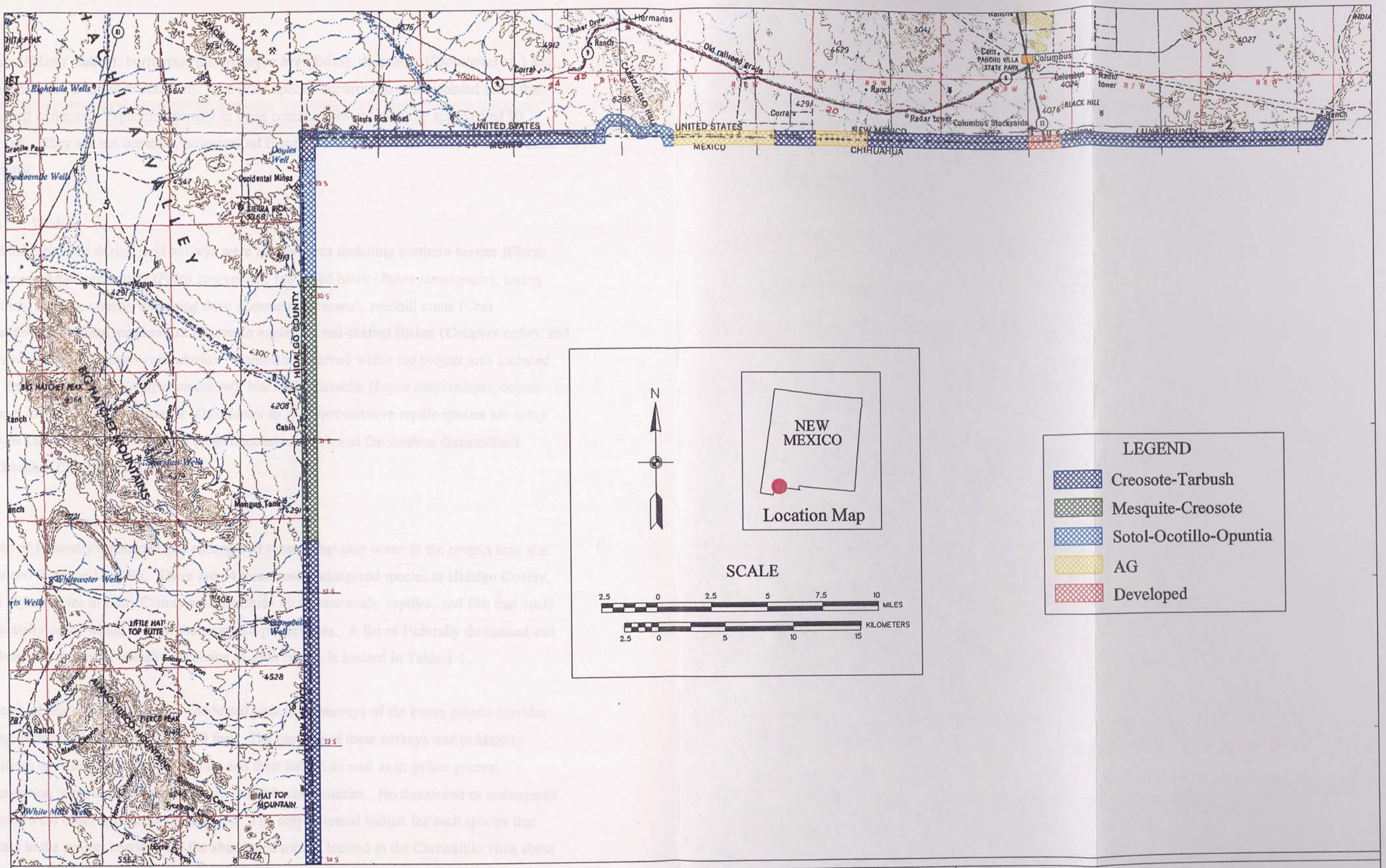

Figure 3-1: General locations of vegetation types near Columbus, New Mexico

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grass (*Hilaria mutica*), burrograss (*Scleropogon brevifolius*), dropseeds (*Sporobolus* sp.) and vine mesquite (*Paspalum obtusum*). The latter species occurred in small isolated areas that retained moisture. Vegetation density in these communities occasionally approached 90 percent. They are not depicted, however, on Figure 3-1 because of the linear nature of these features.

3.3 Wildlife

Wildlife observed during field surveys were mainly birds including northern harrier *(Circus cyaneus*), American kestrel (*Falco sparverius*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), mourning dove (*Zenaida macroura*), sandhill crane (*Grus canadensis*), western meadowlark (*Sturnella neglecta*), red-shafted flicker (*Colaptes cafer*), and burrowing owls (*Speotyto cunicularia*). Mammals observed within the project area included the desert cottontail (*Sylvilagus auduboni*), blacktail jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), and kangaroo rat (*Dipodomys* sp.). Representative reptile species are spiny lizards (*Sceloporus* sp.), whiptails (*Cnemidophorous* sp.), and the western diamondback rattlesnake (*Crotalus scutulatus*).

3.4 Threatened and Endangered Species

A list of Federally threatened and endangered species that may occur in the project area was obtained from the USFWS. There are 14 threatened/endangered species in Hidalgo County, and eight species in Luna County which include birds, mammals, reptiles, and fish that could potentially occur within or near the proposed project area. A list of Federally threatened and endangered species potentially occurring in each county is located in Table 3-1.

A team of professional biologists conducted pedestrian surveys of the entire project corridor using parallel transect intervals of 30 feet. The purpose of these surveys was to identify locations of Federally protected species and their habitat as well as to gather general information regarding the vegetation and wildlife communities. No threatened or endangered species were observed during the surveys. The only potential habitat for such species that occurs in the project corridor are the abandoned mines, located in the Carrizalillo Hills about 18 miles west of the Columbus POE. These mines could provide roosting/breeding sites for the lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*) and Mexican long-nosed bat (*Leptonycteris nivalis*).

Table 3-1

Federally threatened and endangered species for Hidalgo and Luna Counties, New Mexico.

County	Common Name Scientific Name	General Habitat Requirements	Status
Hidalgo	Mexican gray wolf *Canis lupus baileyi*	Varied habitats including forests, rangelands, and deserts. Prey on large mammals.	Endangered
	New Mexico ridge-nosed rattlesnake *Croatalus willardi obscurus*	Open woodlands, 6,000-8,000 feet. Prey on scorpions, centipedes, lizards, small mammals.	Threatened
	Southwestern willow flycatcher *Empidonax traillii extimus*	Mountain meadows, along streams, dry upland pastures.	Endangered
	Northern aplomado falcon *Falco femoralis septentrionalis*	Open grasslands and deserts. Prey on birds, insects, rodents, and other small mammals.	Endangered
	American peregrine falcon *Falco peregrinus anatum*	Habitats highly varied; deserts to mountains. Prey primarily on birds.	Endangered
	Arctic peregrine falcon *Falco peregrinus tundrius*	Habitats highly varied; riparian, canyons, cliffs, outcrops. Prey primarily on birds.	Endangered
	Bald eagle *Haliaeetus leucocephalus*	Mixed, deciduous, or conifer forest near open water. Prey on fish, small mammals, carrion.	Threatened
	Lesser long-nosed bat *Leptonycteris curasoae yerbabuenae*	Caves, abandoned mines, tunnels, old buildings. Feed on nectar, especially from agave.	Endangered
	Mexican long-nosed bat *Leptonycteris nivalis*	Similar habitats as *L. curasoae* except usually found at higher elevations.	Endangered
	Spikedace *Meda fulgida*	Moderate to large perennial streams. Consume minute plant and animal matter.	Threatened
	Black-footed ferret *Mustela nigripes*	Obligate of prairie dog colonies which is main food source.	Endangered
	Jaguar *Panthera onca*	Tropical and subtropical forests. Prey on deer, ground nesting birds, turtles, otters.	Endangered
	Loach minnow *Rhinichthys cobitis*	Swift flowing perennial streams and rivers. Prey on insects and plant matter.	Threatened
	Mexican spotted owl *Strix occidentalis lucida*	Forested mountain and canyon areas. Prey on mammals, reptiles, birds, and insects.	Threatened
Luna	Mexican gray wolf *Canis lupus baileyi*	See above.	Endangered
	Beautiful shiner *Cyprinella formosa*	Small streams and pools. Consume insects and algae.	Threatened
	Southwestern willow flycatcher *Empidonax traillii extimus*	See above.	Endangered
	Northern aplomado falcon *Falco femoralis septentrionalis*	See above.	Endangered
	American peregrine falcon *Falco peregrinus anatum*	See above.	Endangered
	Arctic peregrine falcon *Falco peregrinus tundrius*	See above.	Endangered
	Bald eagle *Haliaeetus leucocephalus*	See above.	Threatened
	Black-footed ferret *Mustela nigripes*	See above.	Endangered

3.5 Cultural Resources

3.5.1 Cultural Overview

The American southwest has long been known as a region for rewarding archaeological research due to well-preserved cultural antecedents that reach back over time to the last glacial period when now-extinct megafauna inhabited the area and were hunted by Paleo-Indian groups. The archaeological record documents the presence of people in the Southwest for at least 11,000 years and details a progression from nomadic big-game hunting and wild-food gathering to sedentary agriculture.

As is the case throughout the southwest, Paleo-Indian sites are rare in south-central and southwestern New Mexico and have been found primarily in eroded terrain where older land forms have been exposed (Cordell 1984). Although a limited number of Clovis, Folsom, and post-Folsom sites have been excavated, the majority of information on this early period of human occupation in the region has been compiled from diagnostic projectile points found at multicomponent sites or as isolated occurrences.

By the end of the Pleistocene, early Native American groups had shifted their subsistence patterns from hunting megafauna to a more intensive gathering and collecting economy, supplemented by the hunting of smaller game. Out of the Paleo-Indian base grew what is termed the "Archaic" tradition, which prevailed for thousands of years and was a widespread cultural adaptation to changing environmental conditions (i.e., drying trend) in the Southwest, which gave way to new adaptations co-varying over time and in different localities. The Archaic tradition is associated with a variety of hunting-gathering, largely preceramic, and, for the most part, nonagricultural, cultures that employed milling stone technology and were ancestral to many of the better-known agricultural societies.

The Archaic period may be characterized as a time of increasing sophistication in hunting and gathering techniques through both technological development and the evolution of ever more complex subsistence-settlement systems, in conjunction with a gradually increasing dependence upon floral food resources. A transition to a partial reliance on agriculture accompanied population growth and the development of more sedentary settlement patterns. The broad tradition that has been associated with the Archaic period in southern New Mexico is the

Cochise culture, which was first defined in the San Pedro, Sulphur Spring, and San Simon valleys of southeastern Arizona (Sayles 1983; Sayles and Antevs 1941). The Archaic period generally is estimated from about 8,000 B.C. to A.D. 200 in the Southwest, although the terminal date varies considerably from one place to another.

Drought conditions that commenced around A.D. 100 and continued until A.D. 500 to 700 were the primary impetus for local cultures to increasingly depend on domesticated resources. Cultural complexity increased, population density increased at select locales with higher agricultural potential, and semisedentary villages were formed at or near agricultural locations (Sechrist 1994; Stuart and Gauthier 1981). Pithouse villages and ceramic production both made their appearance around A.D. 400 during this Formative period in south-central New Mexico (Jornada Mogollon) and southwestern New Mexico (Mimbres Mogollon), although both cultural traits appear earlier throughout southeastern Arizona.

A climatic change to wetter conditions around A.D. 700 resulted in the establishment of small settlements at the mouths of canyons and on the higher alluvial terraces along the margins of basin floors and expanded areas of agricultural potential being opened up as a result of both dry and floodwater farming (Sechrist 1994). Within several hundred years (A.D. 1000-1100), prehistoric populations concentrated into larger villages in areas where permanent or significant water sources were available. With the onset of the "Great Drought" of the latter thirteenth century (which in reality was not a drought, but a destabilizing of climatic conditions associated with irregular and unpredictable precipitation cycles), major village locations throughout the Southwest were abandoned and population relocation and redistributions occurred. By A.D. 1400 or 1450, this phenomenon of abandonment was the case at all major villages throughout southern New Mexico (Sechrist 1994; Stuart and Gauthier 1981).

The Protohistoric period of approximately A.D. 1500 to 1700, culturally, was very different from the preceding Formative (pithouse-pueblo) period in southern New Mexico. The entire Mogollon area was abandoned by the time of Spanish exploration, and the pueblo villages had not been occupied for at least 100 years (Sechrist 1994). With the extreme changes in climatic and environmental conditions that were unsuited to agricultural pursuits, it is likely that the native populations who formerly dwelled in the large pueblo villages either adapted a subsistence-settlement strategy of foraging and dispersed, smaller habitations, or simply moved

out of the area. For example, historic accounts of Spanish explorers note the presence of a variety of small groups of hunter-gatherers along the Rio Grande, including the Apache, Jumano, and Quemanderos (Sechrist 1994).

It was during this period that Apaches and Athabascans from the north entered the Southwest, migrating to southern New Mexico by about A.D. 1500 (Opler 1983). Within a hundred years, these groups, which were encountered by Spanish explorers and later entrants to the area, were intensively using various environmental zones by means of a hunting and gathering subsistence strategy that enabled them to exploit large areas containing varied resources (Lekson 1985). Although Apachean sites have been documented in south-central and southwestern New Mexico, the archaeological evidence is elusive and the finds have been limited (Sechrist 1994). Similarly, the Comanches, who sporadically raided the area and pressured the southern Apache groups westward, left little evidence of their presence in the archaeological record (Sechrist 1994; Wallace and Hoebel 1952).

The final period of cultural history in southern New Mexico is that of Euro-American occupation, which spans from A.D. 1598 to the present, essentially coterminous with the Protohistoric period. Because of the presence of available water for agriculture, the focus of Euro-American occupation in southern New Mexico was in the Rio Grande Valley, most notably at Las Cruces and in portions of the Mesilla Valley, New Mexico, and at El Paso, Texas; the remainder of the area was only sparsely settled (Sechrist 1994).

In 1848, two years after the end of the Mexican War, northern and central New Mexico was ceded to the United States by the Treaty of Guadalupe, becoming a territory in 1850; the southern portion of the state was acquired from Mexico by the Gadsden Purchase in 1854. The 1870s brought a time of local turmoil due to conflicts involving ranchers, landowners, homesteaders, and various Apachean groups. By the 1880s, the railroad had entered New Mexico, the Indian Wars were ended, and new population influxes of miners and settlers were occurring. Although the mining boom was short-lived, an economic base was provided by agriculture, manufacturing, and ranching that enabled the successful admission of the state to the Union in 1912.

3.5.2 Previous Cultural Resources Investigations

Records searches were conducted in the database of the New Mexico Cultural Resource Information System maintained by the Archaeological Records Management Section of the New Mexico State Historic Preservation Division (HPD) and in the files of the Bureau of Land Management (BLM), Las Cruces Field Office. A total of 38 archaeological sites have been recorded within one mile of the project area. Of these, seven are prehistoric artifact scatters identified by New Mexico State University (NMSU) archaeologists during a seismic line survey in 1981. These sites lie north of the border at the east end of the project area; one, LA 35226, is in the project right-of-way and is described below. (In New Mexico, sites are designated by Laboratory of Anthropology [LA] site numbers.) To the west, in the lower Carrizalillo Hills, LA 58907, a flaked-stone scatter and historic mining camp, was recorded by Bureau of Land Management (BLM) archaeologists during the course of a survey of drill pad locations in 1986. To the south, where the border passes through the Hachita Valley, is LA 72901, a historic ranching site.

The other 29 archaeological sites within one mile of the project area were recorded by Human Systems Research, Inc. (HSR), during a survey conducted by HSR between 1991 and 1993 for the USACE, Albuquerque District, for another proposed JTF-6 project (Sechrist 1994). The project required an intensive pedestrian archaeological survey of the New Mexico-Chihuahua border from Anapra to Antelope Wells, New Mexico, within the IBWC 60-ft right-of-way. With a transect interval of approximately 50 feet, the effective width of the survey was 100 feet north of the border fence. The project also required block and linear surveys of staging areas, helipads, listening and observation posts, borrow pits, and access roads. The project resulted in the identification and recordation of 99 archaeological sites and 523 isolated occurrences. Sites were recorded using the then-current Laboratory of Anthropology, Museum of New Mexico, Archaeological Site Survey Form. Site documentation included site location maps, site maps, feature maps where appropriate, and comprehensive photographs. Most of the sites are on public land administered by the BLM and BLM criteria were used to define and classify sites and isolated occurrences.

3.5.3 Known Cultural Resources Properties

No properties listed in the National Register of Historic Places (NRHP) or in the New Mexico State Register of Cultural Properties are in the project area; potential NRHP eligibility of

properties in the project area is discussed in Section 4.1.3. Of the 29 sites recorded by HSR within one mile of the present project area, two are outside the project area itself; these are LA 83766, a historic mining site, and LA 100,706, a historic ranching site. The remaining 27 sites lie within the IBWC 60-ft right-of-way of the approximately 75-mile portion of the border road that is presently scheduled for improvement by JTF-6. These sites include the border itself, which has been designated a site. The sites are as follows, starting with the International Border Site, then proceeding from the eastern end of the project area to the southern end:

LA 85768 (International Border Site)
Site Type: historic refuse scatter with historic border-related features
Cultural/Temporal Affiliation: Euroamerican/Hispanic, U.S. Territorial Period-Recent Period (1854-present)
Remarks: This is a linear site that runs the entire length of New Mexico's border with the Mexican states of Chihuahua and Sonora, a total of 184 miles. Site width corresponds to the IBWC right-of-way on the U.S. side of the border. Site features include the 71 IBWC monuments (of stone masonry or cast iron) erected in the 1850s and 1890s; Monument 1, on the Rio Grande, marks the east end of the site, which runs due west to Monument 40, then due south to Monument 53, then due west again to Monument 71 at the Arizona state line. The other major features are the border fence and border road, lined intermittently with associated historic refuse. The portion of the border road that is presently scheduled for improvement starts 1.6 mile west of Monument 16 and ends 0.7 mile south of Monument 51. The 1991 archaeological site survey form for LA 85786 is reproduced in Appendix D.

LA 85076
Site Type: artifact scatter (flaked stone, ground stone, ceramic), fire-cracked rock scatter
Cultural/Temporal Affiliation: unspecified Jornada Mogollon (AD 400-1400)

LA 85077
Site Type: artifact scatter (flaked stone, ground stone); fire-cracked rock scatter
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85765
Site Type: artifact scatter (flaked stone, ground stone, ceramic)
Cultural/Temporal Affiliation: unspecified Jornada Mogollon (AD 400-1400)

LA 85769
Site Type: artifact scatter (flaked stone)
Cultural/Temporal Affiliation: Late Archaic Period (1800 BC-AD 200)

LA 85770
Site Type: artifact scatter (flaked stone, ground stone)
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85771
Site Type: artifact scatter (flaked stone, ground stone)
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85772
Site Type: artifact scatter (flaked stone, ground stone, ceramic)
Cultural/Temporal Affiliation: (1) Middle Archaic Period (2500-1500 BC); (2) Late Archaic Period (1500 BC-AD 400); (3) Jornada Mogollon, Late Pithouse Period-Early Pueblo Period (AD 1000-1200)

LA 85773
Site Type: artifact scatter (flaked stone, ground stone)
Cultural/Temporal Affiliation: Late Archaic Period (1800 BC-AD 200)

LA 85774
Site Type: artifact scatter (flaked stone, ground stone, ceramic) with habitation features; historic refuse scatter with historic ranching features
Cultural/Temporal Affiliation: (1) Mimbres Mogollon, Early Pueblo Period (AD 1050-1175); (2) Euroamerican, U.S. Territorial Period-Recent Period (1900-1950)

LA 85775
Site Type: artifact scatter (flaked stone, ground stone)
Cultural/Temporal Affiliation: Late Archaic Period (1500 BC-AD 400)

LA 85776
Site Type: artifact scatter (flaked stone, ground stone, ceramic)
Cultural/Temporal Affiliation: (1) Early Archaic Period (5500-2500 BC); (2) Jornada Mogollon, Late Pithouse Period-Late Pueblo Period (1060-1350)

LA 85777
Site Type: artifact scatter (flaked stone)
Cultural/Temporal Affiliation: Protohistoric Period (AD 1400-1700)

LA 85778
Site Type: artifact scatter (flaked stone); historic mining features
Cultural/Temporal Affiliation: (1) Late Archaic (1000 BC-AD 200); (2) Euroamerican, Statehood Period (1915-1940)

LA 85779
Site Type: artifact scatter (flaked stone) with hearth feature
Cultural/Temporal Affiliation: Late Archaic Period (1800 BC-AD 200)

LA 85780
Site Type: artifact scatter (flaked stone)
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85781
Site Type: artifact scatter (flaked stone)
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85783
Site Type: artifact scatter (flaked stone)
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85782
Site Type: historic refuse scatter
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period-Statehood Period (1890-1920)

LA 85797
Site Type: artifact scatter (flaked stone), fire-cracked rock scatter
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 100,707
Site Type: historic refuse scatter
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period (1892)

LA 85786
Site Type: artifact scatter (flaked stone, ground stone)
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85787
Site Type: historic refuse scatter with historic habitation feature
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period-Statehood Period (1890-1920)

LA 85788
Site Type: historic refuse scatter with historic mining and habitation features
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period-Statehood Period (1890-1940)

LA 85790
Site Type: artifact scatter (flaked stone, ground stone) with hearth feature
Cultural/Temporal Affiliation: unspecified Prehistoric (< AD 1550)

LA 85791
Site Type: artifact scatter (flaked stone, ground stone) with hearth features
Cultural/Temporal Affiliation: Protohistoric Period (1400-1700)

LA 85793
Site Type: historic refuse scatter
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period-World War II Period (1880-1945)

In addition to these 27 sites recorded by HSR, the 1.6-mile Phase I access road from Luna County Road B-002 to the border passes through a site recorded by NMSU archaeologists in 1981:

LA 35226
Site Type: artifact scatter (flaked stone, ground stone, ceramics)
Cultural/Temporal Affiliation: (1) Middle Archaic Period (2000-1500 BC); (2) unspecified Jornada Mogollon (AD 200-1400)

3.5.4 Newly Recorded Sites

The archaeological survey conducted for the present project between November 29 and December 18, 1998, used the same field methods as the original JTF-6 Border Survey cited above. Each of the sites listed above was relocated and the site record for each site was updated as necessary. In addition, five sites were newly identified and recorded within the project right-of-way for the 1.6-mile Phase I access road from Luna County Road B-002 to the border and for four miles of the Phase II road that goes through the through the lower Carrizalillo Hills; these segments which had been excluded from the previous (1992) JTF-6 Border Survey. These sites, identified by field number, are as follows:

Site AAI-98055-01
Site Type: historic refuse scatter with historic ranching features
Cultural/Temporal Affiliation: Statehood Period-Recent Period (1915-1950)

Site AAI-98055-12
Site Type: artifact scatter (flaked stone); historic refuse scatter with historic mining features
Cultural/Temporal Affiliation: (1) unspecified Prehistoric (<AD 1550); (2) Euroamerican, Statehood Period (1915-1940)

Site AAI-98055-13
Site Type: artifact scatter (flaked stone
Cultural/Temporal Affiliation: unspecified Prehistoric (<AD 1550)
Site AAI-98055-14

Site Type: historic refuse deposit with historic ranching feature
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period (1900-1910)

Site AAI-98055-15
Site Type: historic refuse deposit with hearth feature
Cultural/Temporal Affiliation: Euroamerican, U.S. Territorial Period (1900-1910)

3.6 Socioeconomics

3.6.1 Population

The region of influence for the road improvement project is comprised of Hidalgo and Luna counties in New Mexico. The population in the two county area was estimated to be 30,276 as of July 1997 (U.S. Bureau of the Census 1997). This demonstrates an increase of 19 percent

over the 1990 population of 24,068. The majority of the population, 80 percent, is located in Luna County.

The largest city within the two county area is Deming, with an estimated 1996 population of 14,155 (U.S. Bureau of the Census 1997). Other significant cities in the area are Lordsburg in Hidalgo County with a population of 2,792 and Columbus Village in Luna County with a population of 847.

The racial mix of the study area is mainly composed of Caucasians (50 percent) and Hispanics (48 percent) with the remaining two percent being African Americans. The racial mix of Columbus village is similar to that of the study area, with the population being 50 percent Caucasians and 50 percent Hispanics.

3.6.2 Employment and Income

The total number of jobs in the study area was 11,610 in 1996, which was an increase of 25 percent over 1990 (Regional Economic Information System 1997). Luna County supplies most of the employment opportunities (73 percent) in the study area, with a total employment of 8,514 as of 1996. The retail trade industry provides the largest number of jobs, followed by services and the state and local government sector.

The labor force in the study area was 14,920 for 1997, with 1,660 people unemployed and an unemployment rate of 8.6 percent (New Mexico Department of Labor 1998). This unemployment rate is significantly above the State of New Mexico rate of 5.7 percent. Luna County raises the unemployment rate in the study area due to its own rate being 12.6 percent, one of the highest in the state.

Total personal income in the two county area was $402 million in 1996. Luna County ranked 19th of 33 counties in the state, while Hidalgo ranked 27th (Regional Economic Information System 1997). Total personal income has grown at an average annual rate of 5.9 percent over the past ten years. This is consistent with the national rate of growth but lower than that of the State (6.4 percent). Per capita personal income in the study area as of 1996 was $14,879, which is up from $10,820 in 1986 and is lower than the 1996 state of New Mexico figure of $18,814. Additionally, it is significantly lower than the national average of $24,436.

3.7 Air Quality

The major factor affecting air quality near Columbus is wind-blown dust and pollutants. However, Luna and Hidalgo Counties are both in attainment for all National Ambient Air Quality Standards (EPA 1997).

3.8 Water Resources

The only important stream or natural surface water within Luna and Hidalgo Counties is the Mimbres River that is located outside of the construction area. The Mimbres River flows southeast across the northwest portion of Luna County towards Deming, New Mexico, becoming a subsurface stream just north of Deming. Surface flow within the Mimbres River is only present during periods of exceptional rainfall. The subsurface flow of the Mimbres River helps to recharge the underground basin of the area (NRCS 1980 and BLM 1993).

The proposed construction area does not contain any significant natural surface waters or associated riparian habitat; there are several man-made ditches or canals in the agricultural areas west of Columbus which provide irrigation (NRCS 1973 and 1980, GSRC 1998). The proposed construction area does contain arroyo habitat. The majority of arroyo habitats within the construction area are ephemeral streams or washes that do not contain vegetation dependent on permanent or free water. Two ephemeral streams are located within the Phase I construction area west of the POE. These streams contain potential jurisdictional wetland habitat likely resulting from an elevated road and inadequate sized culvert at the crossing on the Mexico side of the border. The two areas of concern are approximately 40 feet wide each and extend north from the border through the entire ROW (65 feet) for a total area of approximately 0.12 acres. The potential wetlands are located between IBWC Monuments 24 and 25 at the following UTM coordinates (3519500N 0243500E, and 3519500N 0244250E). These two areas are illustrated as unnamed drainages on the Columbus, New Mexico 7.5' quadrangle.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Proposed Action

4.1.1 Land Use

No new roads would need to be constructed since border roads exist throughout the entire project area. Therefore, land use would not be altered by road construction and no impacts are expected.

4.1.2 Vegetation

Assuming all roads within the Columbus project area would be widened to at least 12 feet but no more than 18 feet, between 18 to 73 acres of common vegetation could be removed, or directly impacted during the proposed action. Even under the worst case scenario (73 acres), the impacts to vegetation would be negligible when considering the vast amount of similar habitat within Luna and Hildago counties and the fact that this acreage is spread over a 75-mile corridor. After road improvements are completed, areas surrounding the road would be allowed to revegetate.

4.1.3 Wildlife

Some wildlife habitat is expected to be lost with the decrease in vegetation. Habitat removal and disturbance may displace some common wildlife species. However, similar habitats are directly adjacent to the existing road, so displacement and disturbance of wildlife would be insignificant. The design of the single-bar (guardrail type) vehicle barriers will not to impede wildlife movements.

4.1.4 Threatened and Endangered Species

No Federally threatened or endangered species were observed during recent surveys of the proposed project area (GSRC 1998). However, the abandoned International Mine, which is directly adjacent to the border road, has the potential to provide habitat for the lesser long-nosed bat, and Mexican long-nosed bat. The area immediately surrounding this mine would be avoided during construction activities. Although a few agaves would probably be removed during construction, impacts to the overall potential food source for these bats is expected to be negligible. Otherwise, no specific habitats for other listed species such as willow-dominated brush, streams and deep water pools, woodlands, and cliffs were observed in the project area.

Therefore, habitat requirements for the listed species are not met, and no adverse effects to threatened or endangered species would be expected due to the proposed project.

Additionally, the USFWS expressed specific concerns regarding potential impacts to the jaguar, northern aplomado falcon, and New Mexico ridge-nosed rattlesnake. Habitat loss and fragmentation were the main concerns for the jaguar and northern aplomado falcon, while the threat of poaching could increase for the ridge-nosed rattlesnake due to improved roads. As mentioned above, these species are not expected to occur within the project area based on field surveys and the habitats these species require. Presence within the project area would most likely be incidental and extremely rare, especially concerning the ridge-nosed rattlesnake which only occurs in the mountains of central and western Hidalgo County. Also, habitat loss and fragmentation would be minimal since construction activities are focused on improvements rather than new road construction.

4.1.5 Cultural Resources

Excepting the International Border Site, which is discussed below, 32 archaeological sites (27 previously recorded and 5 newly recorded) lie within the project right-of-way. In terms of NRHP eligibility, those recorded by HSR for the previous (1992) JTF-6 Border Survey were programmatically classified as "insufficiently evaluated, potential unknown"; avoidance was the recommended treatment and was achieved by routine monitoring of construction activities (Mendez et al. 1994; Sechrist 1994). For the purposes of the present project, the 32 sites can be classified as (1) likely to yield information important in prehistory and history, or (2) requiring further investigation (i.e., testing) to determine such likelihood; therefore, until proved otherwise, the sites should be considered potentially eligible. Avoidance of the sites is obviously the preferred option; however, in the event that strict avoidance is not possible and if project constraints preclude any testing program, JTF-6 will develop a project-specific monitoring program in consultation with the New Mexico HPD and the BLM Las Cruces Field Office.

At the time of the previous (1992) JTF-6 Border Survey, selective avoidance of the International Border Site was recommended (see Appendix D), although road improvements were identified as potential compatible actions. The intermittent scatter of historic artifacts associated with the border was adequately sampled by HSR (Sechrist 1994). The present

project will not affect the boundary monuments, although it should be noted that Monument 26 has been seriously damaged and is structurally unstable. As for the border fence, much of the four-strand fence from Monument 1 to Monument 40 is dilapidated and in some portions is no longer standing. However, fencing will not be removed and IBWC monuments will not be altered in any way. Single-bar (guardrail type) vehicle barriers will be placed adjacent to the existing road. JTF-6 will coordinate with the New Mexico State Historic Preservation Office and BLM prior to any construction activities within this site.

4.1.6 Socioeconomics

The impacts on socioeconomic resources in the region of influence (ROI) will be discussed in the following sections. Specific characteristics to be discussed are population, employment, income, and business sales.

Construction activities associated with the road construction project would have insignificant impacts on population. The construction would be performed by 200-250 troops beginning in February 1999. No additional hiring would occur within the local area. Thus, construction of the border road would not induce permanent in- or out-migration to the ROI, and as a result, population would not be impacted.

Direct expenditures of the road construction would have direct impacts on income, and sales within the ROI. All labor and some materials would be brought into the local area; however expenditures for construction materials as well as fuel are expected to occur within the ROI. The expenditures which do occur within the ROI are subject to economic multipliers.

The total cost of the road construction project is not known at this time, however similar construction projects have been performed in the area. Due to the relative size of the ROI economy, this type of construction activity would be expected to provide a positive but insignificant economic stimulus. The impacts from this type of construction would easily be absorbed into the broader economy.

4.1.6.1 Environmental Justice

Executive Order 12898 of 11 February 1994 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provides that each U.S. Federal

agency shall identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs. policies, and activities on minority and low income populations in the United States. The project site is located near a small urban area with similar characteristics of the broader ROI. The project only involves modifications to existing road. Therefore, no disproportionately high and adverse impacts on minority and low income populations are expected. Under the definition of Executive Order 12898, there would be no adverse environmental justice impacts.

4.1.7 Air Quality

All counties in the proposed project areas are all in attainment for all National Ambient Air Quality Standards criteria pollutants (EPA 1997). Use of construction equipment such as front endloaders and graders during road construction would produce additional air pollutants (i.e., dust, carbon monoxide). However, due to the limited duration of construction, the short-term addition of pollutants from construction activities would only minimally impact the area and no long-term excursions would be expected from the proposed action. Dust suppression activities would also be used as required.

4.1.8 Water Resources

Water resources are extremely limited within the project area. The two ephemeral streams present in the Phase I border section are the only potential surface waterways that would possibly be affected by the proposed action. The proposed action would not change existing drainage patterns along the U.S.-Mexico border. Minor soil erosion from short-term construction activities and loss of vegetation adjacent to these areas is not expected to impact water quality.

The primary water quality concern would be the potential of release of toxic materials such as diesel fuel, oil, and other hazardous materials due to spills or improper disposal. By following methods outlined in the Storm Water Pollution Prevention Plan (Appendix B), impacts are not expected.

4.2 No Action Alternative

The no action alternative would essentially result in the status quo for the USBP. The no action alternative would not result in any significant impacts to natural or cultural resources. The no

action alternative would not include any changes in employment or construction and would therefore have no effect on population, income, employment, or business activity. Benefits from the proposed road construction such as lowered vehicle maintenance costs, improved drainage, and decreased soil erosion would not occur as a result of the no action alternative.

4.3 Cumulative Impacts

The Council of Environmental Quality defined cumulative impact as the incremental impact of multiple present and future actions with individually minor but collectively significant effects. Cumulative impact can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment (Bain *et al.* 1986).

In order to evaluate cumulative effects of the past and present border road repair projects, EAs from previous and current border road repair operations in the region, and the PEIS developed for all JTF-6 activities along the U.S.-Mexico border were reviewed. An analysis of each component of the affected environment was completed from the existing EAs in order to identify which would have cumulative impacts as a result of the past and proposed road construction activities. Water and biological resources (i.e., vegetation and wildlife habitat) would be slightly affected by cumulative impacts associated with the past and proposed road construction projects.

The primary cumulative effect of the past and proposed road projects is permanent loss of vegetation and associated wildlife habitat. Overall, along the entire U.S.-Mexico border from California to Texas, a total of about 3,000 acres of vegetation, mostly semidesert grassland and desert scrub communities, has been removed by JTF-6 road, range, fence, and helipad repair and construction activities. This represents less than 0.01 percent of the total land area within the area along the entire U.S. - Mexico border. Soil losses have been minimized through the implementation of erosion control measures. Although the amount of soils saved is not quantifiable, JTF-6 operations have reduced extant erosion problems in numerous locations. Air emissions have been produced by vehicles, aircraft, and heavy equipment; however, these have not resulted in significant cumulative impacts due to the short duration of the activities, the dispersion capabilities of the region, and the remote locations of most of the operations. Construction and maintenance activities have had cumulative positive impacts on socioeconomic resources within the border area and the nation through reductions in illegal

drug smuggling activities. Since Fiscal Year 1993, the El Paso Sector USBP has experienced a 200 and 165 percent increase in the amount marijuana and cocaine, respectively, seized by their agents. In addition, there have been positive impacts on natural and cultural resources due to the additional baseline information collected through JTF-6 projects, and mitigation measures through proper compliance procedures (U.S. Army 1998).

5.0 ENVIRONMENTAL DESIGN MEASURES

This section describes the measures that may be implemented to eliminate/mitigate potential significant adverse impacts of proposed road construction. These measures and guidelines may be incorporated as part of the proposed action. During road construction, crews would maintain a minimum construction width to avoid impacting a large area. Following construction, areas surrounding the road would be allowed to revegetate to reduce erosion. Existing roads would be utilized, rather than building new roads and further impacting the project area.

Potential adverse impacts to cultural resources by proposed construction activities would be mitigated by avoidance and monitoring of those resources. If avoidance is not an option, mitigation of cultural resources determined to be eligible for the NHRP would take place in accordance with the National Historic Preservation Act (NHPA), as amended, and its implementing regulation, 36, CFR Part 800.

Although unlikely, a hazardous materials spill (i.e., fuel spill) could occur during proposed construction. Any major fuel spill would be contained by immediately constructing an earthen dike and applying a petroleum absorbent (i.e., granular, pillow, sock, etc.) to absorb and contain the spill. In addition, any major spill would be reported immediately to appropriate Federal and state agencies. A hazardous materials site assessment would be conducted after a spill in order to identify potential problems, additional clean-up procedures, and if necessary, mitigative measures. This would include disposal of the absorbent in accordance with all federal and state regulations.

6.0 PUBLIC INVOLVEMENT

6.1 Agency Coordination

This chapter discusses consultation and coordination that occurred during preparation of this document. This includes contacts made during development of the proposed action, and writing of the EA. Formal and informal coordination has been conducted with the following agencies:

- U.S. Army Corps of Engineers (Ft. Worth District),
- Joint Task Force Six (JTF-6),
- Immigration and Naturalization Service (INS; U.S. Border Patrol),
- State Historic Preservation Office,
- Bureau of Land Management (BLM),
- New Mexico Department of Game and Fish,
- U.S. Fish and Wildlife Service (USFWS), and
- U.S. Section, International Boundary and Water Commission (IBWC).

6.2 Public Review

The draft EA was made available for public review. The Notice of Availability (NOA) is included in Appendix C. Comments received concerning the draft EA or FONSI will be incorporated into the final EA.

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8.0 LIST OF ACRONYMS/ABBREVIATIONS

BLM	Bureau of Land Management
DoD	Department of Defense
EA	Environmental Assessment
E.O.	Executive Order
GSRC	Gulf South Research Corporation
IBWC	International Boundary and Water Commission
INS	Immigration and Naturalization Service
JTF-6	Joint Task Force Six
LEA	Law Enforcement Agencies
LWC	Low water crossing
MWSS	Marine Wing Support Squadron
NDCS	National Drug Control Strategy
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PEIS	Programatic Environmental Impact Statement
POE	Port of Entry
ROI	Region of Influence
ROW	Right-of-way
USACE	U.S. Army Corps of Engineers
USBP	United States Border Patrol
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator

9.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

NAME	AGENCY/ORGANIZATION	DISCIPLINE/ EXPERTISE	EXPERIENCE	ROLE IN PREPARING EA
Mr. Milton Blankenship	JTF-6	Geology/ Hazardous Materials	14 years geology, HAZMAT management, and geohydrology	EA coordination and review
Ms. Linda Ashe	Ft. Worth Corps of Engineers	Biology/Aquatic Ecology	4 years EA/EIS and related studies	Contract manager and EA review and coordination
Mr. Chris Ingram	Gulf South Research Corporation	Biology/Ecology	17 years EA/EIS studies	Project manager, EA review
Mr. Kim Rightmire	Wendy Lopez and Associates	Range/Watershed Science	11 Years EA/EIS studies	Pollution Prevention Plan
Mr. Dwayne Templet	Gulf South Research Corporation	Forestry/NEPA coordination	7 years EA/EIS studies.	Project manager and EA review
Dr. Laurie Slawson	Aztlan Archaeology	Archaeology	24 years cultural resources, EA/EIS studies	Cultural resources and impact analysis
Mr. Morgan Rieder	Aztlan Archaeology	Archaeology	12 years cultural resources, historic preservation studies	Cultural resources and impact analysis
Mr. Blake Smietanski	Gulf South Research Corporation	Biology/Ecology	4 years EA/EIS studies.	Assistant project manager and EA preparation
Ms. Kelli Backstrom	Gulf South Research Corporation	Socioeconomics	5 years economic analyses and EA/EIS studies.	Socioeconomic resources and impact analysis
Mr. Steve Pratt	Wendy Lopez and Associates	Engineering	22 years Professional Engineer	Pollution Prevention Plan

APPENDIX A

General Site Photos

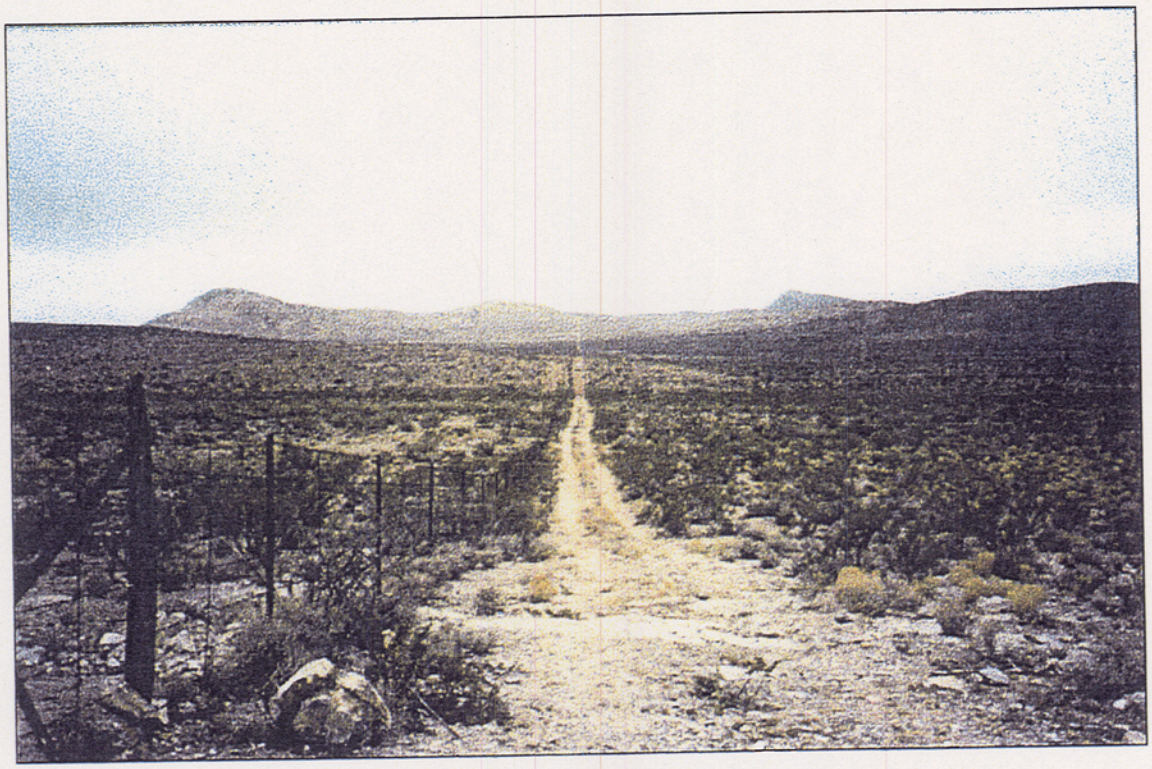

Photo 1. Typical vegetation adjacent to IBWC Monument 36 near Columbus, NM.

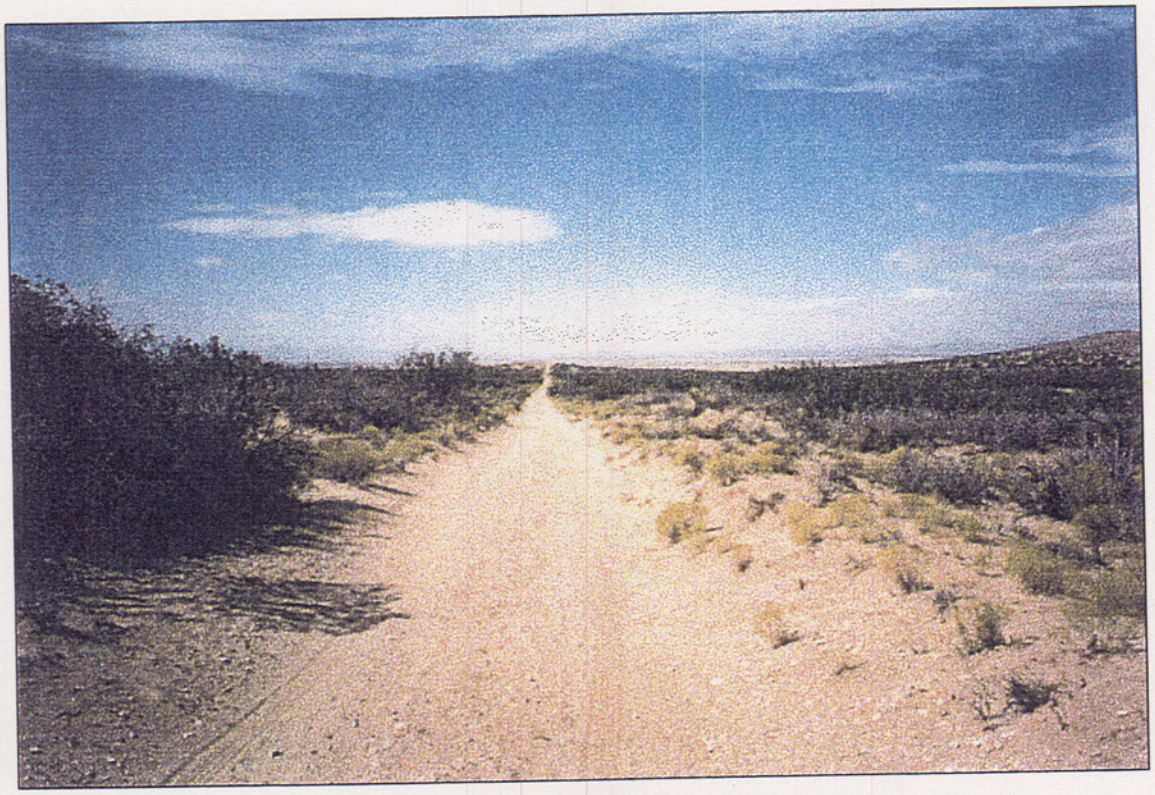

Photo 2. Typical vegetation adjacent to IBWC Monument 17 facing west near Columbus, NM.

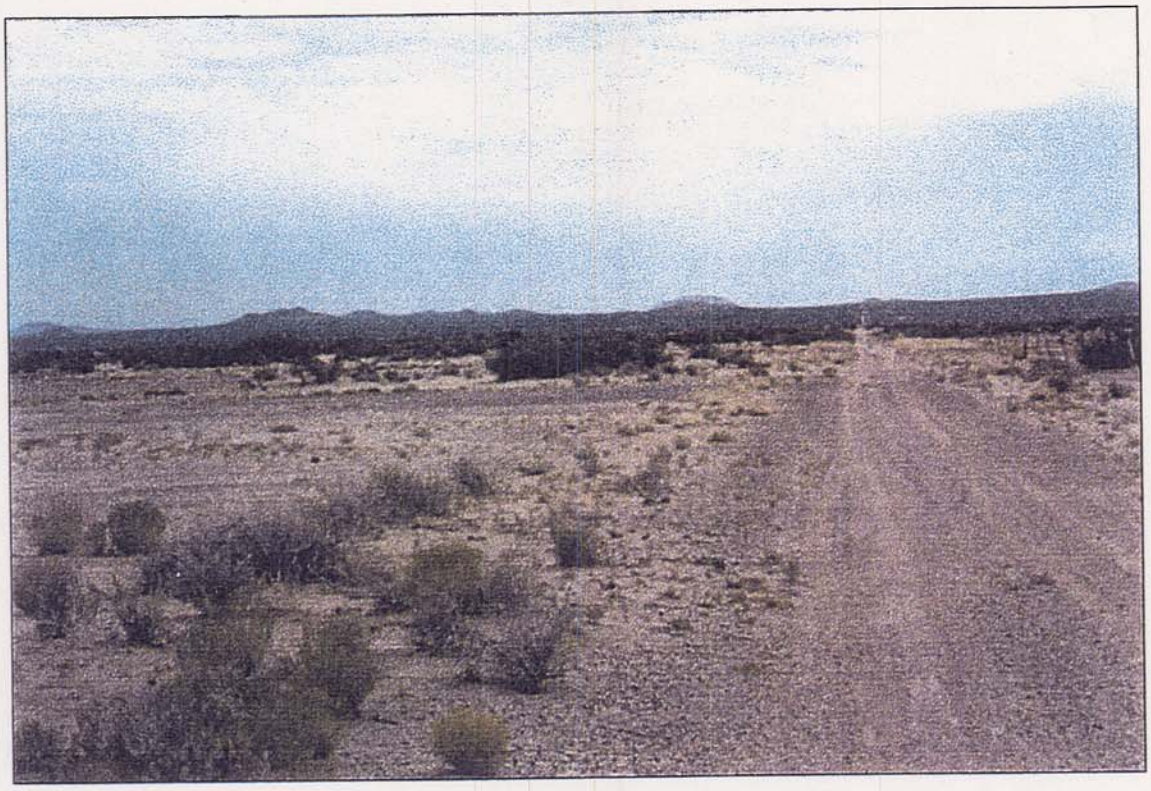

Photo 3. Typical vegetation adjacent to IBWC Monument 19 facing east near Columbus, NM.

Photo 4. Typical vegetation adjacent to IBWC Monument 35 facing west near Columbus, NM.

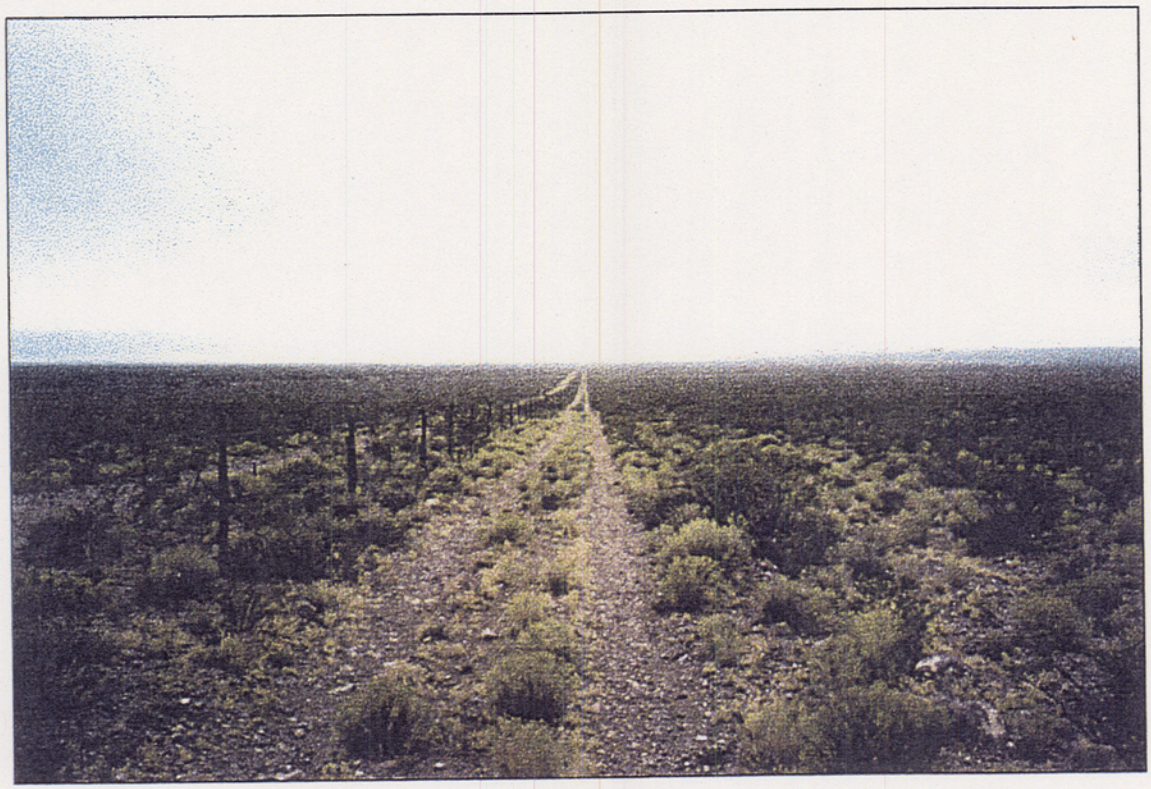

Photo 5. Typical vegetation adjacent to IBWC Monument 43 facing south near Columbus, NM.

Photo 6. International Mine (abandoned).

APPENDIX B

Stormwater Pollution Prevention Plan

STORM WATER POLLUTION PREVENTION PLAN

FOR

JTF-6 BORDER ROAD REPAIR PROJECT
COLUMBUS, NEW MEXICO

LUNA AND HIDALGO COUNTIES, NEW MEXICO

PREPARED BY
WENDY LOPEZ & ASSOCIATES
1825 MARKET CENTER BLVD., STE. 510
DALLAS, TEXAS 75207

DECEMBER 1998

OWNER CERTIFICATION FOR
JTF-6 BORDER ROAD REPAIR PROJECT
COLUMBUS, NEW MEXICO
LUNA AND HIDALGO COUNTIES, NEW MEXICO

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Permit No.	Company	Signature	Date	Name Printed

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LIST OF TABLES

1. INTRODUCTION

The Columbus, New Mexico (NM) JTF-6 Border Road Repair Project is located within Luna and Hidalgo counties, NM, near the city of Columbus (Figure 1), which is approximately 60 miles west of El Paso, TX and 30 miles south of Deming, NM. The proposed action consists of improving 75 miles of gravel road and installing vehicle barriers in strategic locations along 50 miles of this border road. The road project occurs in Doyle Peak, Hatchett Ranch, Sheridan Canyon, Pierce Peak, Dog Mountains, Victorio Ranch, Double Wells, Cabin Wells, Campbell Well, Corner Well, Victorio Ranch SE, Hermanas, Malpais Hill, Columbus, Columbus SE, Coyote Hill, and Camel Mountain, NM, 7.5' USGS quadrangle maps.

Owner: U.S. Border Patrol
El Paso Sector

1.1 Description

The project would consist of improving 75 miles of dirt/gravel road and installing vehicle barriers in strategic locations along 50 miles of this border road, in and around Luna and Hidalgo counties, NM, near the city of Columbus. The road areas have been significantly disturbed by the original road construction grading and periodic road maintenance, traffic, and repair in the past. Sections of the road have been affected by erosion with washouts common. The construction would involve improving the existing border roads and installing vehicle barriers with emphasis on improving drainage and reducing erosion, and preventing off-road travel in sensitive areas.

The existing road will be widened, where necessary, to a width of 18 feet. The road will be crowned to alleviate wash outs. Additional drainage improvements will include a V-ditch on the south side of the road, a trapezoidal ditch on the north side of the road, channelization of water along natural north-south drainages, and installation of culverts and low water crossings. Proposed road construction activities would occur within a 65 foot right-of-way (ROW) north of the U.S.-Mexico border. The project is divided into two phases (Figure 2). Phase I consists of improving approximately 30 miles of road, 15 miles on either side of the port of entry (POE). Phase II will begin at Johnson's ranch gate, which is approximately 15 miles west of the POE, and continue west to International Boundary and Water Commission (IBWC) Monument 40. The Phase II road runs south from IBWC Monument 40 and continues for approximately 30 miles to Corner Well near IBWC Monument 52. No new roads are required by the proposed action.

The 52nd Combat Engineer Battalion would complete construction for Phase I which is tentatively scheduled to begin in mid-February 1999. An United States Marine Corps unit will also offer support during construction. Additionally, follow up units may be required to complete the total action. Troops will bivouac in an area which is currently a plowed field located between the POE and the city of Columbus, near the intersection of State Route 11 and County Road B001 (approximately 1 mile south of Columbus - Figure 3). An engineering unit has not been assigned for Phase II.

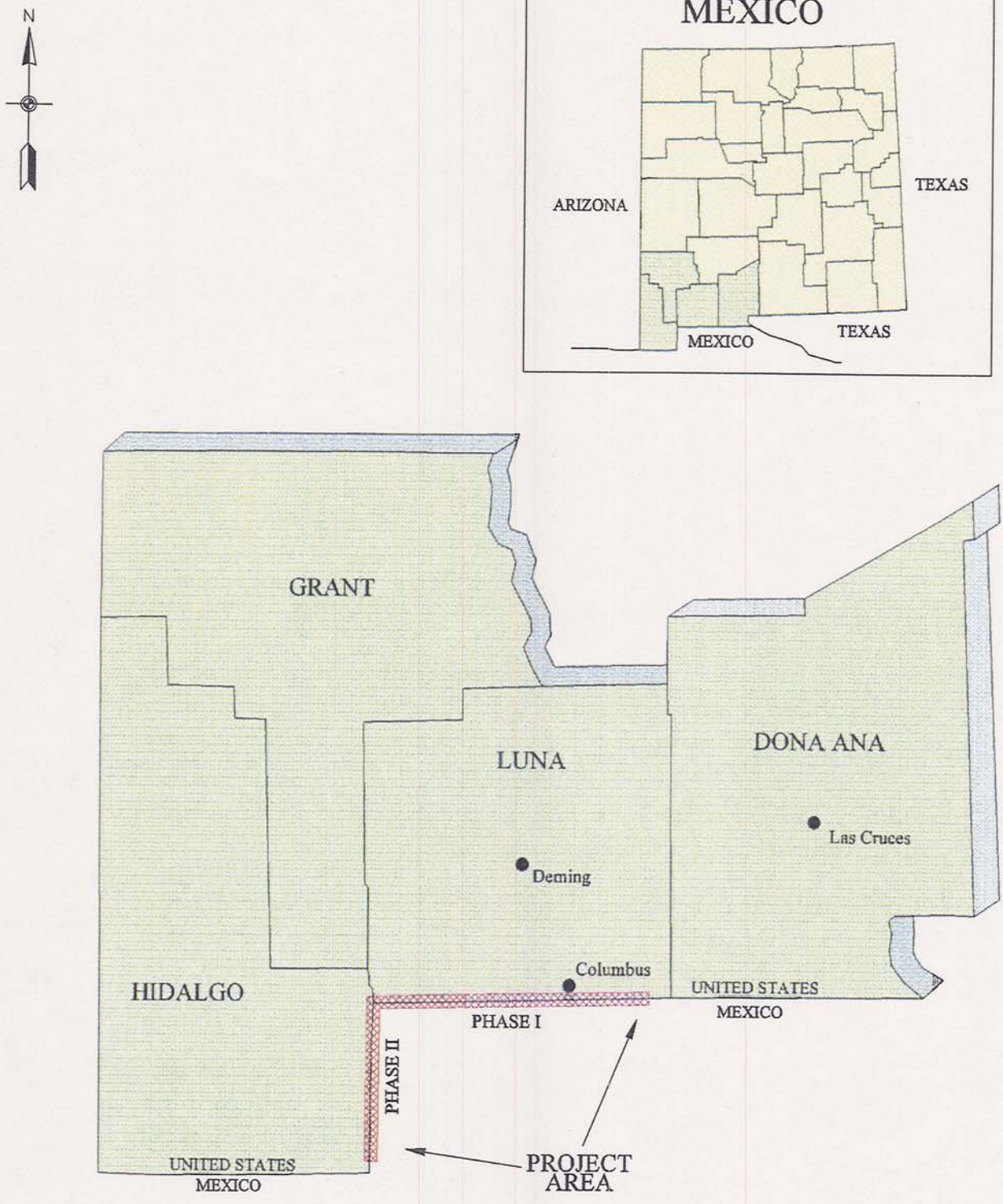


Figure 1: Regional Location of Project Area

WENDY LOPEZ & ASSOCIATES, INC.
engineering/environmental/surveying/
construction services

SCALE: NOT TO SCALE

DATE: DECEMBER 1998

Source: Gulf South Research Corporation

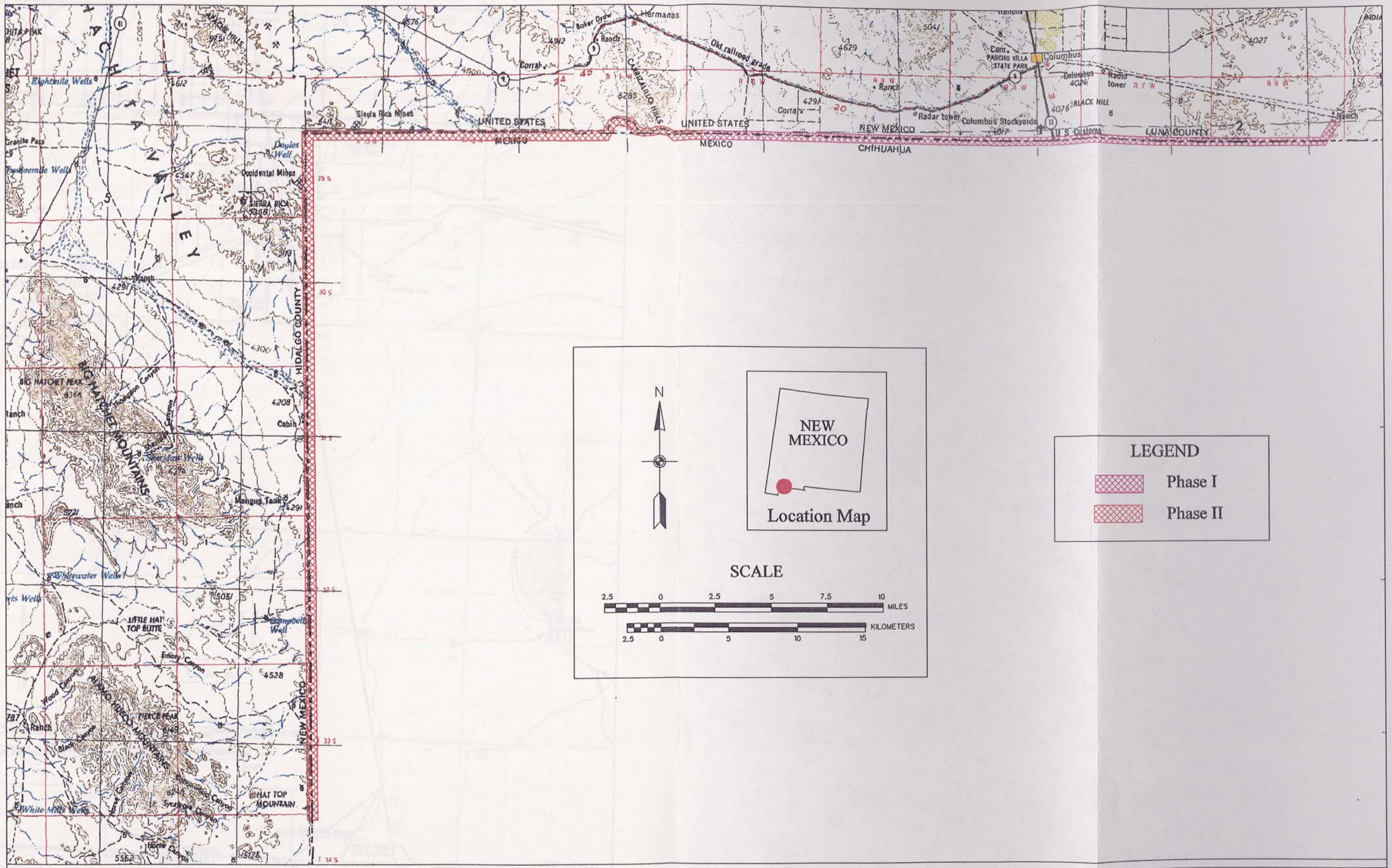


Figure 2: Location of Border Road Improvements

WENDY LOPEZ & ASSOCIATES, INC.
engineering/environmental/surveying/
construction services

Source: Gulf South Research Corporation

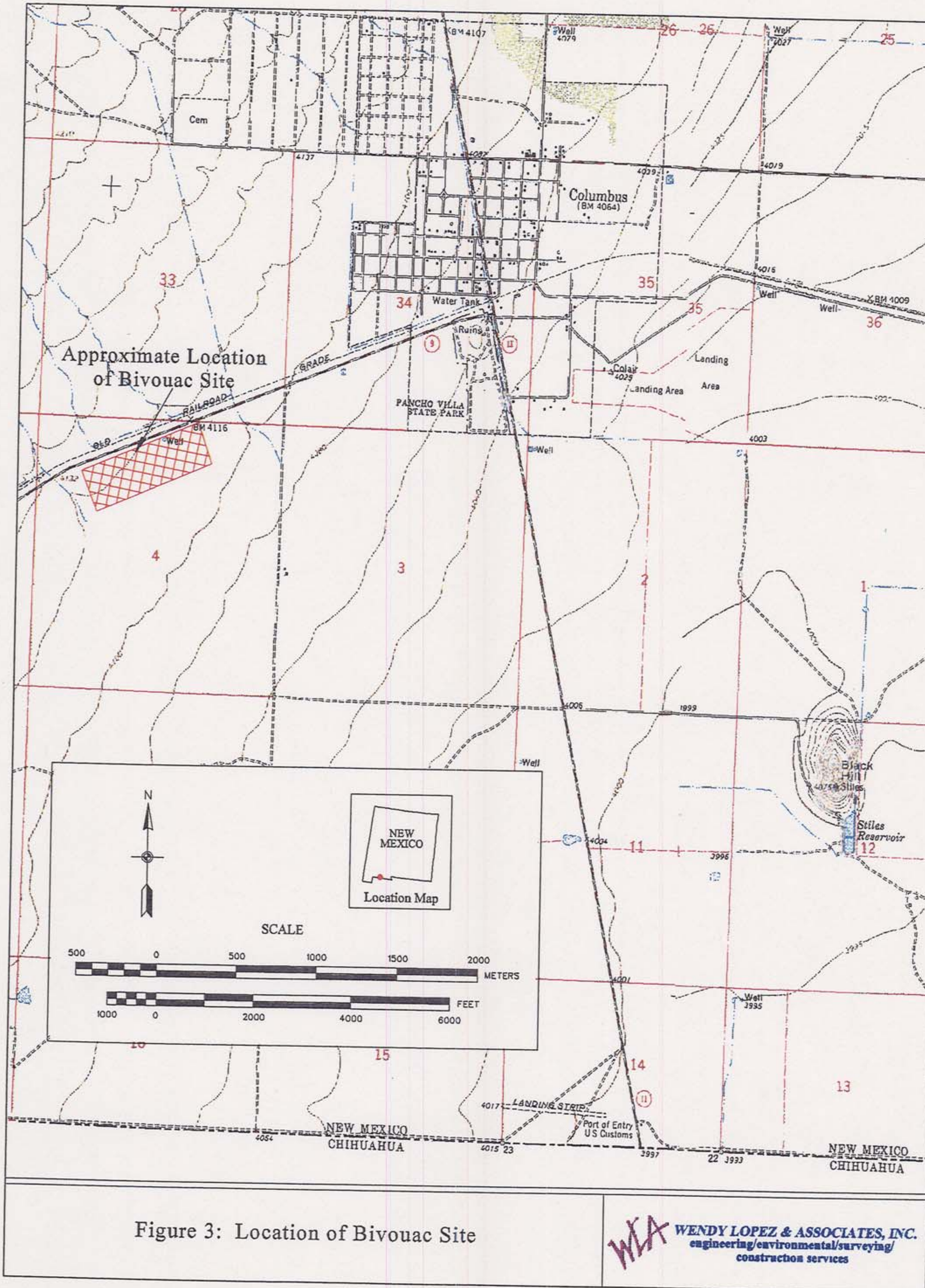


Figure 3: Location of Bivouac Site

Source: Gulf South Research Corporation

1.1.1 Soils and Soil Properties

The vegetation types of the project area are predominantly typical Chihuahuan desert scrub, and mean annual precipitation is between 8 and 18 inches. Vegetation density is generally very low (less than 10 percent).

There are numerous soil types within the project area. The predominant soils of the project area fall into three hydrologic groups; Group B, Group C, and Group D.

Group B soils have a moderate infiltration rate when thoroughly wetted, are moderately deep to deep, moderately well drained to well drained, and are moderately fine to coarse textured. These soils have a moderate rate of water transmission, and a moderately low runoff potential.

Group C soils have a slow infiltration rate when thoroughly wetted, are chiefly soils that have a layer impeding downward movement of water, are moderately fine to fine textured, and have a slow infiltration rate. These soils have a slow water transmission rate, and a moderately high runoff potential.

Group D soils have a very slow infiltration rate when thoroughly wetted, are chiefly clays that have a high shrink-swell potential, and are soils that are shallow over nearly impervious material. The rate of water transmission for these soils is very slow, and they have high runoff potential.

The erodibility of the soils in the project area is rated as being slight to severe. This indicates that protective and corrective measures are needed before and during the time of soil use. Table 1 shows the soil association, hydrologic group, and erodibility as determined by the Soil Conservation Service of the United States Department of Agriculture, for the major geologic associations in the project area.

Table 1
Soil Associations, Hydrologic Groups, and Erodibility
JTF-6 Border Road Repair Project
Columbus, New Mexico

Soils	Hydrologic Group	Erodibility
Lehmans - Rough Broken and Rock Land Association, Shallow and very shallow, medium textured, rolling to very steep cobbly soils and rock outcrop on hills and mountains, Lehmans soils are yellowish-brown and dark yellowish-brown cobbly clay and sandy loams, 0 to 75 percent slopes	C & D	Moderate to severe
Nickel - Upton - Tres Hermanos Association, Shallow and deep, moderately coarse and medium textured, nearly level to rolling very gravelly and gravelly limy soils on piedmont slopes, Nickel soils are dark yellowish-brown very gravelly to cobbly sandy loam ,-Upton soils are pale-brown gravelly sandy loam high in lime with indurated caliche and gravel, Tres Hermanos are pinkish-gray gravelly loam and brown heavy gravelly loam and gravelly clay loam, 1 to 10 percent slopes	B & C	Moderate
Mohave - Stellar Association, Deep, moderately fine textured, nearly level to gently undulating soils on alluvial fans, Mohave soils are brown sandy clay loam, Stellar soils are pale-brown silty clay loam, 0 to 3 percent slopes	B & C	Slight to moderate
Hondale - Mimbres - Bluepoint Association, Deep, moderately fine to coarse textured, nearly level to gently sloping soils on alkali flats, Hondale soils are light reddish-brown loam with clay and sandy clay subsoil, Mimbres soils are light/pale-brown silty clay loam with some lime accumulation, Bluepoint soils are brown/greyish-brown/light-brown loamy sand and fine sand, 0 to 3 percent slopes	D	Slight to moderate

Sources: 1) Soil Conservation Service, 1980, Soil Survey of Luna County, New Mexico
2) Soil Conservation Service, 1973, Soil Survey of Hidalgo County, New Mexico

1.1.2 Site Area

Land directly adjacent to the border is mainly undeveloped throughout the project area. Two USBP stations are responsible for monitoring this section of border. The Columbus, New Mexico/Palomas, Mexico POE is located on the border 3 miles south of Columbus. It consists of one main building, a small landing strip located near the POE, and a few maintenance buildings. Undeveloped land is primarily used for ranching or agriculture with a small portion (approximately 5 miles) of the Big Hatchet State Game Refuge overlapping the project area in the Boot Heel region between Cabin Well and Corner Well. There are also two mining operations (International Mine and Occidental Mines) within the project area. International Mine (also referred to as Sierra Rica Mine) is abandoned, but Occidental Mines are still operational. An unimproved dirt/gravel road runs along the border throughout the entire project limits. Repairing of existing roads would not impact any acreage since all maintenance activities would occur within the existing road rights-of-way.

1.1.3 Name of Receiving Waters

The roads of the project area run east-west and closely follow the U.S./Mexico International Border. The roads cross ridges that form drainage divides that separate drainage into various segments. Rainwater drainage flows through these drainage segments to numerous unnamed intermittent streams. The border roads also cross a number of these unnamed intermittent streams and unnamed canyons (Figure 2).

The only important stream or natural surface water within Luna and Hidalgo counties is the Mimbres River, which is located outside of the construction area. The Mimbres River flows southeast across the northwest portion of Luna County towards Deming, New Mexico, becoming a subsurface stream just north of Deming. Surface flow within the Mimbres River is only present during periods of exceptional rainfall. The subsurface flow of the Mimbres River helps to recharge the underground basin of the area.

The proposed construction area does not contain any significant natural surface waters or associated riparian habitat; there are several man-made ditches or canals in the agricultural areas west of Columbus which provide irrigation. The proposed construction area does contain arroyo habitat. The majority of arroyo habitats within the construction area are ephemeral streams or washes that do not contain vegetation dependent on permanent or free water. Two ephemeral streams are located in the Phase I construction area west of the POE. These streams contain potential jurisdictional wetland habitat likely resulting from an elevated road and inadequate sized culvert at the crossing on the Mexico side of the border. The two areas of concern are each approximately 40 feet wide and extend north from the border through the ROW (65 feet) for a total area of approximately 0.12 acres. The potential wetlands are located between IBWC Monuments 24 and 25 at the following UTM coordinates (3519500N 0243500E, and 3519500N 0244250E). These two areas are illustrated as unnamed drainages on the Columbus, New Mexico 7.5' quadrangle.

1.1.4 Endangered Species

An Environmental Assessment has been performed for this construction action. That document, "Environmental Assessment, JTF-6 Border Road Improvement Project Columbus, New Mexico" (EA) addresses the items detailed in "Addendum A - Endangered Species" portion of the latest *NPDES General Permits For Storm Water Discharges From Construction Activities in Region 6* , published in the Federal Register on July 6, 1998 (63 Fed. Reg. 36489-36519). The EA is included as part of this Storm Water Pollution Prevention Plan (SWPPP) by reference. The following information is from or uses the EA as the information source, and addresses the six steps discussed in the above mentioned Addendum A of the general permit.

The construction site itself is not located within Designated Critical Habitat for listed species (Step 1). There are listed species located within the counties where the construction activities will occur (Step 2). Some of these species may be present in the project area (Step 3). Table 2 lists these threatened or endangered species.

Table 2

Threatened and Endangered Species for Hidalgo and Luna Counties, New Mexico.

County	Scientific Name	Common Name	Status
Hidalgo	Canis lupus baileyi	Mexican gray wolf	Endangered
	Croatalus willardi obscurus	New Mexico ridge-nosed rattlesnake	Threatened
	Empidonax traillii extimus	Southwestern willow flycatcher	Endangered
	Falco femoralis septentrionalis	Northern aplomado falcon	Endangered
	Falco peregrinus anatum	American peregrine falcon	Endangered
	Falco peregrinus tundrius	Arctic peregrine falcon	Endangered
	Haliaeetus leucocephalus	Bald eagle	Threatened
	Leptonycteris curasoae yerbabuenae	Lesser long-nosed bat	Endangered
	Leptonycteris nivalis	Mexican long-nosed bat	Endangered
	Meda fulgida	Spikedace	Threatened
	Mustela nigripes	Black-footed ferret	Endangered
	Panthera onca	Jaguar	Endangered
	Rhinichthys cobitis	Loach minnow	Threatened
	Strix occidentalis lucida	Mexican spotted owl	Threatened
Luna	Canis lupus baileyi	Mexican gray wolf	Endangered
	Cyprinella formosa	Beautiful shiner	Threatened
	Empidonax traillii extimus	Southwestern willow flycatcher	Endangered
	Falco femoralis septentrionalis	Northern aplomado falcon	Endangered
	Falco peregrinus anatum	American peregrine falcon	Endangered
	Falco peregrinus tundrius	Arctic peregrine falcon	Endangered
	Grus americana	Whooping crane	Endangered
	Haliaeetus leucocephalus	Bald eagle	Threatened
	Mustela nigripes	Black-footed ferret	Endangered

Source: Environmental Assessment, JTF-6 Border Road Improvement Project Columbus, New Mexico, GSRC 1998

Additional and detailed information on these species are found in the EA.

None of the listed species or critical habitat are likely to be adversely affected by the construction activity's storm water discharges or storm water related discharge activities (Step 4). Storm water best management practices (BMPs) will be installed and placed in such a manner that their installation and placement will not interfere with listed species or their habitat, and so that storm water will not drain or inundate listed species habitat, or cause any hydrological conditions detrimental to same. There will be no toxic materials in any related storm water drainage.

Applicable BMP measures will be taken to avoid any adverse effects to listed species or critical habitat (Step 5). These measures are discussed later in this SWPPP. Determination of eligibility requirements (Step 6) is not applicable as no adverse effects are likely.

2.0 SEQUENCE OF MAJOR ACTIVITIES

The following major activities will be implemented to reduce sediment and other pollutants in storm water discharges:

- Sensitive areas containing cultural resource sites, unique habitats, rare and endangered plants and animals, and wetlands have been identified prior to the start of construction. These field-surveyed areas will be staked and flagged as areas not to be disturbed by BMP implementation and placement, repair, and/or construction activities.

- Grading within the existing road beds and filling with commercially purchased soil will be accomplished using motorized equipment. The grading contours of the project site will not be altered, the natural and existing contours will be maintained.

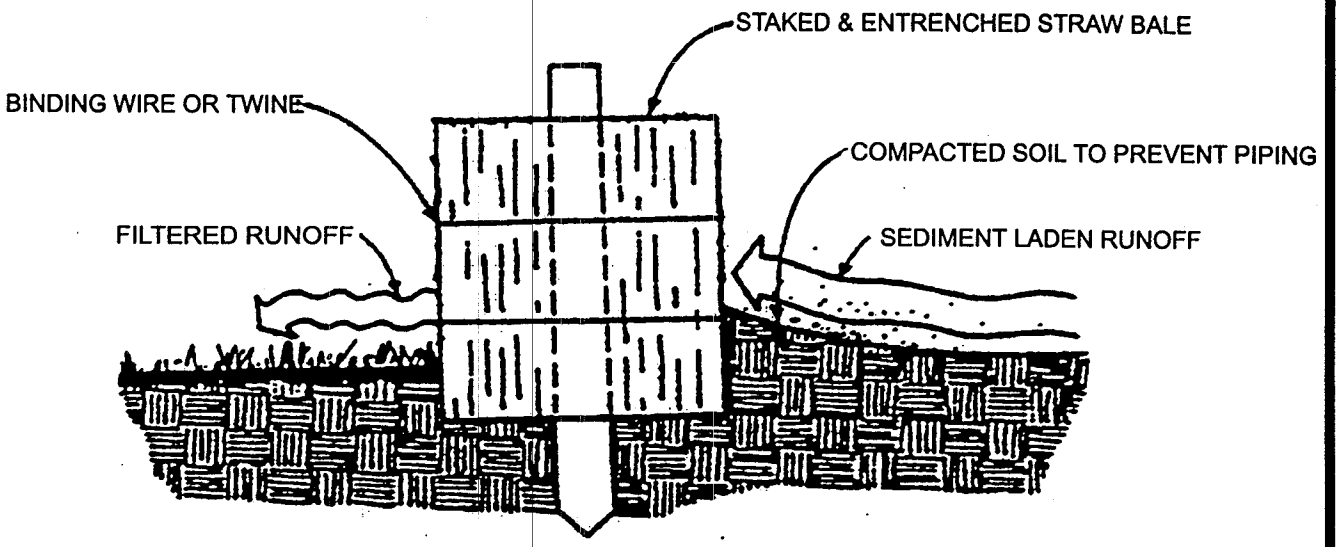
- Thirty to fifty culverts will be installed where the border road crosses existing washes.

- Straw bale check dams and/or siltation fencing, and/or other appropriate BMPs, will be installed at points of water conveyance to reduce slope erosion on the road construction areas and reduce sediment leaving the area. Figures 4 and 5 show typical erosion and sediment controls to be employed.

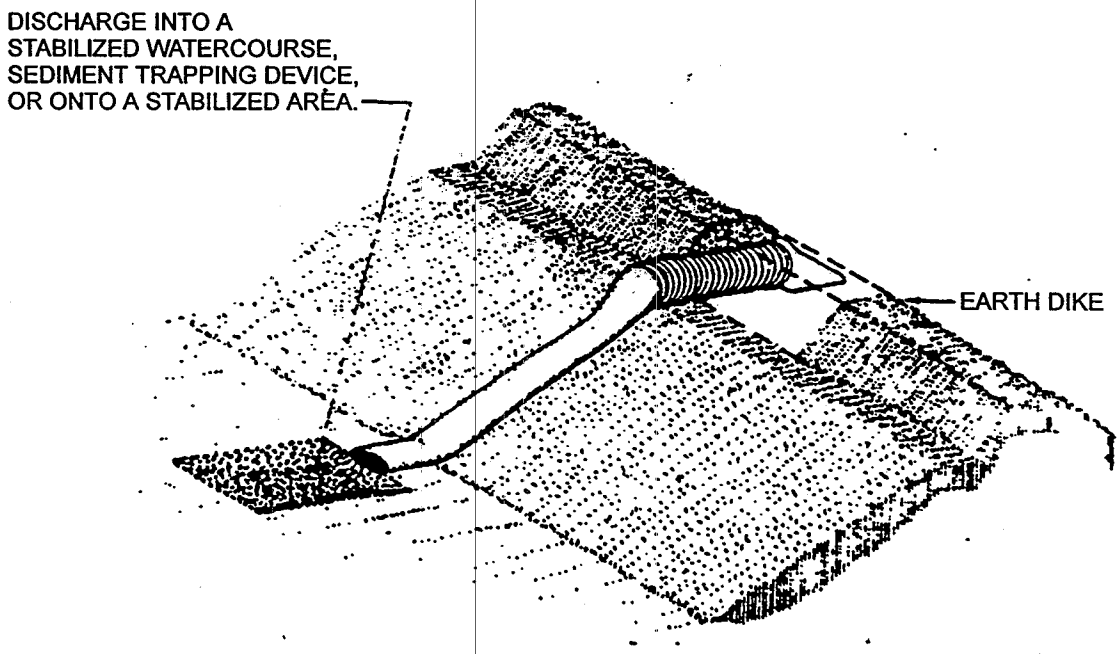
2.1 Controls

2.1.1 Erosion Sediment Controls

Storm Water Management: Road maintenance will include grading within existing road beds and filling with commercially purchased soil. This material will be compacted to provide a relatively impermeable surface to reduce susceptibility to erosion. Bales of straw and/or a siltation fence will be staked in low areas to control surface water and sedimentation at points of conveyance and to reduce velocity of waters discharged. Also, interceptor dikes/swales, pipe slope drains, and other appropriate erosion and sediment control measures may be used as applicable. Figures 4 and 5 show typical erosion and sediment controls to be employed. Other applicable BMPs are detailed in EPA's guidance manual *Storm Water Management for Industrial Activities - Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006, September 1992), or are those used as commonly accepted practice in the construction industry. All control measures will be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practice. Work activities and/or placement and implementation of BMPs will be such that any known or encountered listed species or their habitat will not be adversely affected by storm water flows.



CROSS SECTION OF A PROPERLY INSTALLED STRAW BALE BARRIER



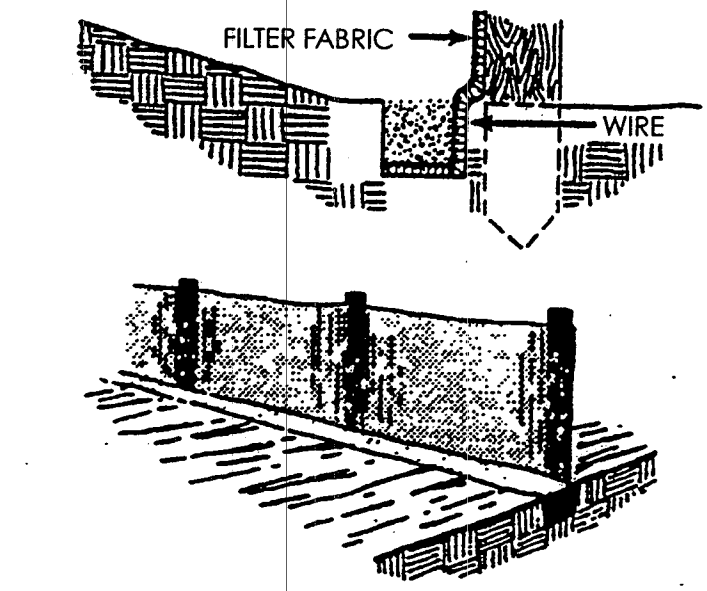
FLEXIBLE PIPE SLOPE DRAIN

Wendy Lopez & Associates, Inc.
Engineering/Environmental/Surveying/Construction Services

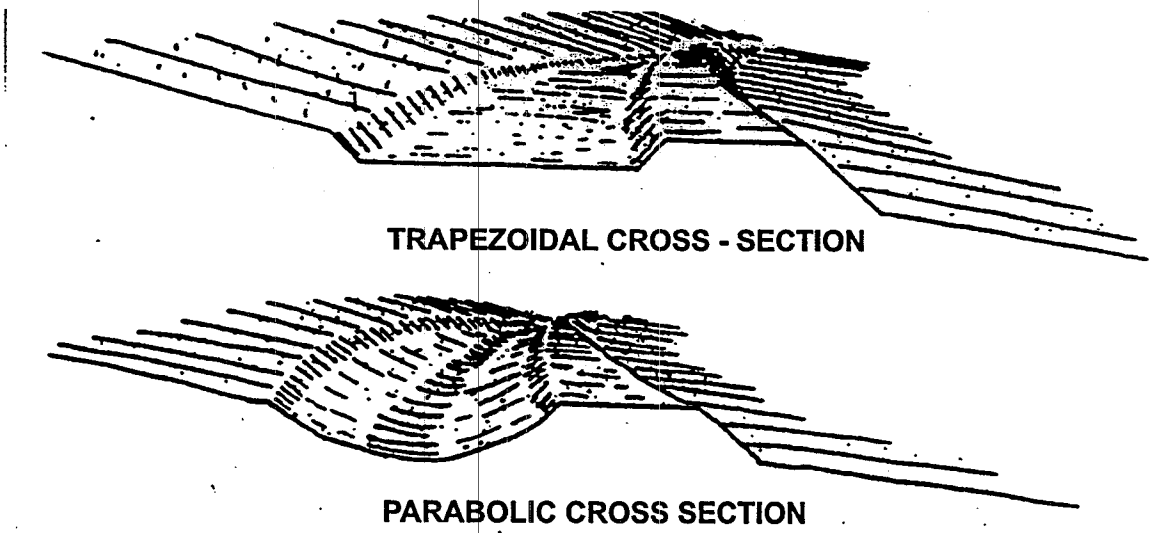
Figure 4

Erosion and Sediment Controls

SOURCE:	DOCUMENT:	JOB #:	SCALE:	FILE:	DATE:
EPA 832-R-92-006	Columbus SWPPP	97024.18	NONE	fig4col.cdr	12/98



FILTER FENCE DETAILS



TYPICAL INTERCEPTOR DIKES & SWALES

Wendy Lopez & Associates, Inc.
Engineering/Environmental/Surveying/Construction Services

Figure 5

Erosion and Sediment Controls

SOURCE:	DOCUMENT:	JOB #:	SCALE:	FILE:	DATE:
EPA 832-R-92-006	Columbus SWPPP	97024.18	NONE	fig5col.cdr	12/98

2.1.2 Waste Disposal Controls

Waste Materials: All construction waste materials (brush, paper, cloth, etc.) will be collected daily, stored in containers and disposed in an approved manner or at a state-approved disposal facility. The trash storage containers will meet all local and state solid waste management regulations. Containers will have secure, tight fitting lids and will be emptied as needed. All personnel participating in construction activities will be instructed on the procedure for waste disposal.

Hazardous Waste: All hazardous waste will be transported, handled, stored, and used in strict accordance with local, state, federal regulations and manufacturers' recommendations.

Sanitary Waste: All sanitary waste will be collected in portable units by a licensed contractor and will be disposed at a state approved facility in accordance with local and state regulations.

Off-Site Vehicle Tracking: Excess mud, dirt, or rock tracked on the public roadways will be removed daily. Excavated material will not be removed from the site.

Exposure Minimization: Vehicle positioning, drip pans, containment diking, and other appropriate BMP exposure minimization controls will be taken to preclude environmental impact of vehicle leakage, fueling operations, or minor maintenance. Major equipment maintenance will not be performed within the project area.

2.1.3 Posting

A notice will be posted near the main entrance to the construction site. Also, as most of the construction site will be linear, a notice will be placed in a publicly accessible location near where the construction is actively underway and will be moved as necessary. An example of the posting, to be completely filled out prior to posting, is included in Attachment 1. A copy of the signed SWPPP will be kept on-site.

2.2 Timing of Controls/Measures

Timing will be as stated in the sequence of major activities. All clearing, grubbing, and control measures for storm water runoff will be done contemporaneously with regrading and other construction activities.

3.0 MAINTENANCE AND INSPECTION PROCEDURES

A Notice of Intent (NOI) form is included as Attachment 2. This form is to be completed and submitted to the EPA; to the Storm Water Coordinator, New Mexico Environmental Department; and to the local agency that approved the grading plans. The US Border Patrol will submit the NOI prior to the commencement of construction. The completed form is to be inserted as Attachment 2 and is thereafter considered to be a part of this storm water pollution prevention plan.

All pollution prevention measures and BMPs will be inspected before anticipated storm events and after such storm events to identify areas contributing to runoff and to evaluate whether their storm water pollution prevention plan measures for reducing pollutant loadings are adequate and properly implemented. The inspector will thoroughly understand the requirements of the SWPPP and have

a basic knowledge of engineering aspects on controlling storm water and reducing runoff pollution. Areas being regraded will be inspected for erosion and soil loss from the site. Discharge points will be inspected for signs of erosion or sediment associated with the discharge. Built up sediment will be removed when it has reached one-third the height of the siltation fence. Locations where vehicles enter and leave the site will be checked for signs of off-site sediment tracking. BMPs and pollution control maintenance procedures will be inspected for adequacy. Written documentation will be maintained for all implementation, maintenance, and inspection of BMPs and pollution control maintenance procedures, and the SWPPP will be revised as necessary during the construction period (Attachments 3, 4, and 5). All controls will remain in place after completion of the project construction until such a time that the soil and vegetation has become predominately stabilized.

3.1 Inventory for SWPPP

The following materials have the potential to be onsite during the improvement of the roads and construction of vehicle barriers:

- Diesel Fuel
- Gasoline
- Oil
- Lubricants
- Hydraulic Fluid
- Transmission Fluid
- Marking Paint

3.2 Spill Prevention

3.2.1 Best Management Practices

The following management practices will be implemented to reduce the risk of spills and accidental exposure of materials and substances to storm water runoff:

- Good Housekeeping: No fuel and/or maintenance materials will be stored on site after working hours. All fuel, fluids, oil and lubricants will be stored aboard designated and specially manufactured service vehicles and removed from the site after working hours.

- Hazardous Materials Storage: All hazardous products will be stored in or aboard designated and specially manufactured service vehicles. The service vehicles will be present only during the time equipment is in operation and will be removed from the site after working hours.

Products will be kept in original sealed containers, and surplus materials will be removed daily after working hours.

3.2.2 Product-Specific Practices

The following product-specific practices will be implemented:

- Petroleum Products: All vehicles will be stored, repaired, and refueled on site (in the bivouac area). All vehicles will be monitored for leaks during regularly scheduled preventive maintenance actions. Petroleum products will be stored in designated and specially manufactured service vehicles. All products will be kept in original sealed

containers during periods of use. All empty containers will be disposed in an approved manner. Spill containment areas will be established at staging areas throughout the road segments, and all equipment will be refueled and repaired within the staging areas. All spills will be promptly cleaned up and reported to applicable regulatory agencies. Equipment will be kept within the spill containment sites to prevent spilled material from reaching and polluting drainage ways. All personnel will be briefed on spill prevention, control, and clean-up procedures. Petroleum products will not be stored on site after working hours.

4.0 CERTIFICATION OF COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS

The storm water pollution prevention plan was prepared in accordance with guidelines published in the Federal Register, Volume 63, Number 128, July 6, 1998 [63 Fed. Reg. 36489-36519]. After construction, an Environmental Protection Agency (EPA) storm water permit will not be required. At that time, a Notice of Termination (NOT) for Industrial Activity (Attachment 6) will be completed and filed with the EPA.

ATTACHMENTS

Attachment #1 - Notification Posting

Attachment #2 - Notice of Intent (NOI) for Construction Activity

Attachment #3 - Inspection and Maintenance Report Form (Rainfall Event)

Attachment #4 - Inspection and Maintenance Report Form (Sediment Basin)

Attachment #5 - Inspection and Maintenance Report Form (Changes)

Attachment #6 - Notice of Termination (NOT) for Industrial Activity

ATTACHMENT #1

NOTIFICATION POSTING

EPA NPDES
Storm Water Program

The following information is posted in compliance with Part IV.B.2. of the NPDES Region 6 Storm Water Construction General Permit [63 Fed. Reg. 36502]. All parties that either individually, or taken together, meet the definition of "operator," must be permitted. Each party should complete a separate form at the construction facility. Each of these parties must have separate and distinct NPDES permit numbers (e.g. a separate permit is typically needed for each Owner/Developer, General Contractor, and/or Builder). If you do not know your NPDES Permit Number, contact the NOI Processing Center at (301)495-4145. EPA's Region 6 storm water hotline phone number is (800)245-6510. If you have mailed your NOI application form and have not received a permit number, you must post a copy of the NOI application form next to this document until you receive your permit number. This form should be posted in a conspicuous place accessible by the public on or at the edge of the facility. This form was prepared as an example and it is not a required form for use with the permit. This information may be displayed in alternative form or formats within guidelines set forth in the permit. Additional information regarding the NPDES Region 6 storm water program may be found on the Internet at http://www.epa.gov/region6/sw/. Any person with a complaint about the operation of this facility in regards to this permit should contact EPA Region 6 at (214)665-7595.

Permit Number	
Contact Name	
Contact Phone	
Project Description	
SWPPP Location (Only necessary if the site is inactive or does not have an on-site location to store the plan.)	

ATTACHMENT #2

NOTICE OF INTENT (NOI) FOR CONSTRUCTION ACTIVITY

THIS FORM REPLACES PREVIOUS FORM 3510-6 (8-98)
See Reverse for Instructions

Form Approved. OMB No. 2040-0188

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with CONSTRUCTION ACTIVITY Under a NPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a NPDES permit issued for storm water discharges associated with construction activity in the State/Indian Country Land identified in Section II of this form. Submission of this Notice of Intent also constitutes notice that the party identified in Section I of this form meets the eligibility requirements in Part I.B. of the general permit (including those related to protection of endangered species determined through the procedures in Addendum A of the general permit), understands that continued authorization to discharge is contingent on maintaining permit eligibility, and that implementation of the Storm Water Pollution Prevention Plan required under Part IV of the general permit will begin at the time the permittee commences work on the construction project identified in Secion II below. IN ORDER TO OBTAIN AUTHORIZATION, ALL INFORMATION REQUESTED MUST BE INCLUDED ON THIS FORM. SEE INSTRUCTIONS ON BACK OF FORM.

I. Owner/Operator (Applicant) Information

Name: UNITED STATES BORDER PATROL Phone: 5055469036

Address: 1701 COLUMBUS HIGHWAY Status of Owner/Operator: P

City: DEMING State: NM Zip Code: 88030-

II. Project/Site Information

Is the facility located on Indian Country Lands? Yes ☐ No ☒

Project Name: JTF 6 BORDER ROAD IMPROVEMENT

Project Address/Location:

City: COLUMBUS State: NM Zip Code: 88029-

Latitude: 31 47 00 Longitude: 107 17 45, THRU 107° 54' County: LUNA

Has the Storm Water Pollution Prevention Plan (SWPPP) been prepared? Yes ☒ No ☐

Optional: Address of location of SWPPP for viewing ☒ Address in Section I above ☐ Address in Section II above ☐ Other address (if known) below:

SWPPP Address: Phone:

City: State: Zip Code:

Name of Receiving Water: NONE

02 10 1999 (Month Day Year) — Estimated Construction Start Date

04 15 1999 (Month Day Year) — Estimated Completion Date

Estimate of area to be disturbed (to nearest acre): 1

Estimate of Likelihood of Discharge (choose only one):

1. ☐ Unlikely
2. ☒ Once per month
3. ☐ Once per week
4. ☐ Once per day
5. ☐ Continual

Based on instruction provided in Addendum A of the permit, are there any listed endangered or threatened species, or designated critical habitat in the project area?

Yes ☐ No ☒

I have satisfied permit eligibility with regard to protection of endangered species through the indicated section of Part I.B.3.e.(2) of the permit (check one or more boxes):

(a) ☒ (b) ☒ (c) ☒ (d) ☒

III. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: RICHARD K MOODY Date: 01/26/99

Signature: Richard K Moody

EPA Form 3510-9 replaced 3510-6 (8-98)

Instructions – EPA Form 3510-9

Form Approved. OMB No. 2040-0188

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity to be Covered Under a NPDES Permit

Who Must File a Notice of Intent Form

Under the provisions of the Clean Water Act, as amended, (33 U.S.C. 1251 et.seq.; the Act), except as provided by Part I.B.3 the permit, Federal law prohibits discharges of pollutants in storm water from construction activities without a National Pollutant Discharge Elimination System Permit. Operator(s) of construction sites where 5 or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least 5 acres, or any site designated by the Director, must submit an NOI to obtain coverage under an NPDES Storm Water Construction General Permit. If you have questions about whether you need a permit under the NPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a State agency, write to or telephone the Notice of Intent Processing Center at (703) 931-3230.

Where to File NOI Form

NOIs must be sent to the following address:

Storm Water Notice of Intent (4203)
USEPA
401 M. Street, SW
Washington, D.C. 20460

Do not send Storm Water Pollution Prevention Plans (SWPPPs) to the above address. For overnight/express delivery of NOIs, please include the room number 2104 Northeast Mall and phone number (202) 260-9541 in the address.

When to File

This form must be filed at least 48 hours before construction begins.

Completing the Form

OBTAIN AND READ A COPY OF THE APPROPRIATE EPA STORM WATER CONSTRUCTION GENERAL PERMIT FOR YOUR AREA. To complete this form, type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, call the Notice of Intent Processing Center at (703) 931-3230.

Section I. Facility Owner/Operator (Applicant) Information

Provide the legal name, mailing address, and telephone number of the person, firm, public organization, or any other entity that meet either of the following two criteria: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have the day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. Each person that meets either of these criteria must file this form. Do not use a colloquial name. Correspondence for the permit will be sent to this address.

Enter the appropriate letter to indicate the legal status of the owner/operator of the project: F = Federal; S = State; M = Public (other than federal or state); P = Private.

Section II. Project/Site Information

Enter the official or legal name and complete street address, including city, county, state, zip code, and phone number of the project or site. If it lacks a street address, indicate with a general statement the location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility in degrees, minutes, and seconds to the nearest 15 seconds. The latitude and longitude of your facility can be located on USGS quadrangle maps. Quadrangle maps can be obtained by calling 1-800 USA MAPS. Longitude and latitude may also be obtained at the Census Bureau Internet site: http://www.census.gov/cgi-bin/gazetteer.

Latitude and longitude for a facility in decimal form must be converted to degrees, minutes and seconds for proper entry on the NOI form. To convert decimal latitude or longitude to degrees, minutes, and seconds, follow the steps in the following example.

Convert decimal latitude 45.1234567 to degrees, minutes, and seconds.

1) The numbers to the left of the decimal point are degrees.
2) To obtain minutes, multiply the first four numbers to the right of the decimal point by 0.006. 1234 x .006 = 7.404.
3) The numbers to the left of the decimal point in the result obtained in step 2 are the minutes: 7'.
4) To obtain seconds, multiply the remaining three numbers to the right of the decimal from the result in step 2 by 0.06: 404 x 0.06 = 24.24. Since the numbers to the right of the decimal point are not used, the result is 24".
5) The conversion for 45.1234 = 45° 7' 24".

Indicate whether the project is on Indian Country Lands.

Indicate if the Storm Water Pollution Prevention Plan (SWPPP) has been developed. Refer to Part IV of the general permit for information on SWPPPs. To be eligible for coverage, a SWPPP must have been prepared.

Optional: Provide the address and phone number where the SWPPP can be viewed if different from addresses previously given. Check appropriate box.

Enter the name of the closest water body which receives the project's construction storm water discharge.

Enter the estimated construction start and completion dates using four digits for the year (i.e. 05/27/1998).

Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest acre; if less than 1 acre, enter "1." Note: 1 acre = 43,560 sq. ft.

Indicate your best estimate of the likelihood of storm water discharges from the project. EPA recognizes that actual discharges may differ from this estimate due to unforeseen or chance circumstances.

Indicate if there are any listed endangered or threatened species, or designated critical habitat in the project area.

Indicate which Part of the permit that the applicant is eligible with regard to protection of endangered or threatened species, or designated critical habitat.

Section III. Certification

Federal Statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner of the proprietor, or

For a municipality, state, federal, or other public facility: by either a principal executive or ranking elected official. An unsigned or undated NOI form will not be granted permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Director, OPPE Regulatory Information Division (2137), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address.

ATTACHMENT #3

INSPECTION AND MAINTENANCE REPORT FORM (RAINFALL EVENT)

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF
A RAINFALL EVENT OF 0.5 INCHES OR MORE

INSPECTOR:_____ DATE:_____

INSPECTOR'S QUALIFICATIONS:

_____

_____

_____

_____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL _____ INCHES

STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED? (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE:_____

ATTACHMENT #4

INSPECTION AND MAINTENANCE REPORT FORM (SEDIMENT BASIN)

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN:

DEPTH OF SEDIMENT IN BASIN	CONDITION OF BASIN SIDE SLOPES	ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT?	CONDITION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE:

DOES MUCH SEDIMENT GET TRACKED ON TO ROAD?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE?	IS THE CULVERT BENEATH THE ENTRANCE WORKING?

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

ATTACHMENT #5

INSPECTION AND MAINTENANCE REPORT FORM (CHANGES)

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

REASONS FOR CHANGES:

_____

_____

_____

_____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE:_____ DATE:_____

ATTACHMENT #6

NOTICE OF TERMINATION (NOT) FOR INDUSTRIAL ACTIVITY

THIS FORM REPLACES PREVIOUS FORM 3510-7 (8-92)

Please See Instructions Before Completing This Form

Form Approved. OMB No. 2040-0086
Approval expires: 8-31-98

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under a NPDES General Permit for Storm Water Discharges Associated with Industrial Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the NPDES program. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

NPDES Storm Water General Permit Number:

Check Here if You are No Longer the Operator of the Facility: ☐

Check Here if the Storm Water Discharge is Being Terminated: ☐

II. Facility Operator Information

Name: Phone:

Address:

City: State: ZIP Code:

III. Facility/Site Location Information

Name:

Address:

City: State: ZIP Code:

Latitude: Longitude: Quarter: Section: Township: Range:

IV. Certification:

I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a NPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

Print Name: Date:

Signature: _____

Instructions for Completing Notice of Termination (NOT) Form

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under an EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit (including the 1995 Multi-Sector Permit) for Storm Water Dicharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26(b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a NPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the the following address:

Storm Water Notice of Termination (4203)
401 M Street, S.W.
Washington, DC 20460

Completing the Form

Type or print, using upper-case letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, telephone or write the Notice of Intent Processing Center at (703) 931-3230.

Instructions - EPA Form 3510-7
Notice of Termination (NOT) of Coverage Under The NPDES General Permit for Storm Water Discharges Associated With Industrial Activity

Section I Permit Information

Enter the existing NPDES Storm Water General Permit number assigned to th e facility or site identified in Section III. If you do not know the permit number , telephone or write your EPA Regional storm water contact person.

Indicate your reason for submitting this Notice of Termination by checking th e appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II Facility Operator Information

Give the legal nam e of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or sit e manager. Do not use a colloquial nam e. Enter the complete address and telephone number of the operator.

Section III Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter , section, township, and range (to the nearest quarter section) of the approximat e center of the site.

Section IV Certification

Federal statutes provide fo r severe penalties for submitting false information on this application form. Federal regulations require this application to be signed a s follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principa l business function, or any other person who performs similar policy or decisio n making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principa l executive officer or ranking elected official.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours pe r application, including time for reviewing instructions, searching existing dat a sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief , Information Policy Branch, 2136, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460, or Director, Office of Information an d Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

APPENDIX C

Notice of Availability
Comments on Draft EA and Responses

NOTICE OF AVAILABILITY
FOR THE DRAFT ENVIRONMENTAL ASSESSMENT ON
JTF-6 BORDER ROAD IMPROVEMENT PROJECT
COLUMBUS, NEW MEXICO

The public is invited to comment on the Draft Environmental Assessment (EA) concerning border road improvements near Columbus, New Mexico. The Draft EA was prepared for the U.S. Border Patrol and Joint Task Force Six (JTF-6) by the U.S. Army Corps of Engineers, Fort Worth District.

The proposed action would facilitate the U.S. Border Patrol's mission to reduce illegal drug activity along the border in the Columbus/Palomas area. The proposed action would involve improving approximately 75 miles of border road including installation of vehicle barriers at strategic locations.

Copies of the Draft EA, "JTF-6 Border Road Improvement Project, Columbus, New Mexico" are available upon written request to the U.S. Army Corps of Engineers, Fort Worth District, CESWF-PL-RE, P.O. Box 17300, Fort Worth, Texas 76102-0300. Copies of the Draft EA may be viewed at the Columbus Village Library located in Columbus, NM 88029, and the Deming City Public Library located at 301 S Tin St., Deming, NM 88030.

Written comments must be received no later than 15 January 1999. Send written comments to Ms. Linda Ashe, U.S. Army Corps of Engineers, Fort Worth District, P.O. Box 17300, Fort Worth, Texas 76102-0300. Or call Ms. Ashe at 817-978-2370 for further information.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

OFFICE OF THE COMMISSIONER
UNITED STATES SECTION

JAN 19 1999

Ms. Linda Ashe
U.S. Army Corps of Engineers
Fort Worth District
P.O. Box 17300
Fort Worth, TX 76102-0300

Re: Draft Environmental Assessment, JTF-6 Border Road Improvement Project Columbus, New Mexico

Dear Ms. Ashe:

The U.S. Section of the International Boundary and Water Commission has reviewed the referenced document. We request that language be included in the document stating that existing drainage patterns of transboundary runoff will not be changed by the proposed road improvements. We acknowledge the statement included under Environmental Consequences, Cultural Resources, noting that International Boundary and Water Commission boundary markers will not be affected by the proposed work.

We thank you for the opportunity to review this document. If you have any question, please contact me at (915) 832-4148.

Sincerely,

Yusuf E. Farran

Yusuf E. Farran, P.E.
Division Engineer
Environmental Management Division

The Commons, Building C, Suite 310 • 4171 N. Mesa Street • El Paso, Texas 79902
(915) 832-4100 • (FAX) (915) 832-4190

P.O. Box 738
Columbus, NM 88029-0728

January 6, 1999

Ms. Linda Ashe
U.S. Army Corps of Engineers
Fort Worth District
P.O. Box 17200
Fort Worth, TX 76102-0300

Dear Ms. Ashe:

RE: JFT-6 Border Road Improvement Project, Columbus, New Mexico

My wife and I live at an isolated location on the Anapra Road (NM #9, S.E.), three miles east of Columbus and two miles from the Mesican border.

When we moved here six years ago we were frequently calling the Border Patrol to pick up illegals. There were 40 of them in the first two years. In 1998 there were only four. I attribute the fact that this number has diminished because we have two large Labrador Retrievers. Very few, almost no, illegals cross in our area now.

I would recommend that dogs be used on the border to stop illegal crossings. I would not recommend German Shepherds or any other vicious dogs. Bloodhounds would be very useful as they track but do not attack their quarry when they find him. If the use of dogs is considered feasible, I recommend that a fence be constructed along the border to keep the dogs on U. S. territory.

Yours truly,

Bill Ward

RESPONSES TO DRAFT EA COMMENTS

JTF-6 ROAD BORDER ROAD IMPROVEMENT PROJECT
COLUMBUS, NEW MEXICO

INTERNATIONAL BOUNDARY AND WATER COMMISSION (January 19, 1999)

"We request that language be included..."
Language has been included in Section 4.1.8 stating that existing drainage patterns along the border will not be changed by the proposed road improvements. Thank you for your comments.

BILL WARD (January 6, 1999)

"I would recommend that dogs be used on the border to stop illegal crossings."
Comment noted. Thank you for your comments.

APPENDIX D

1991 Archaeological Site Survey Form
for the International Border Site

LA 85768

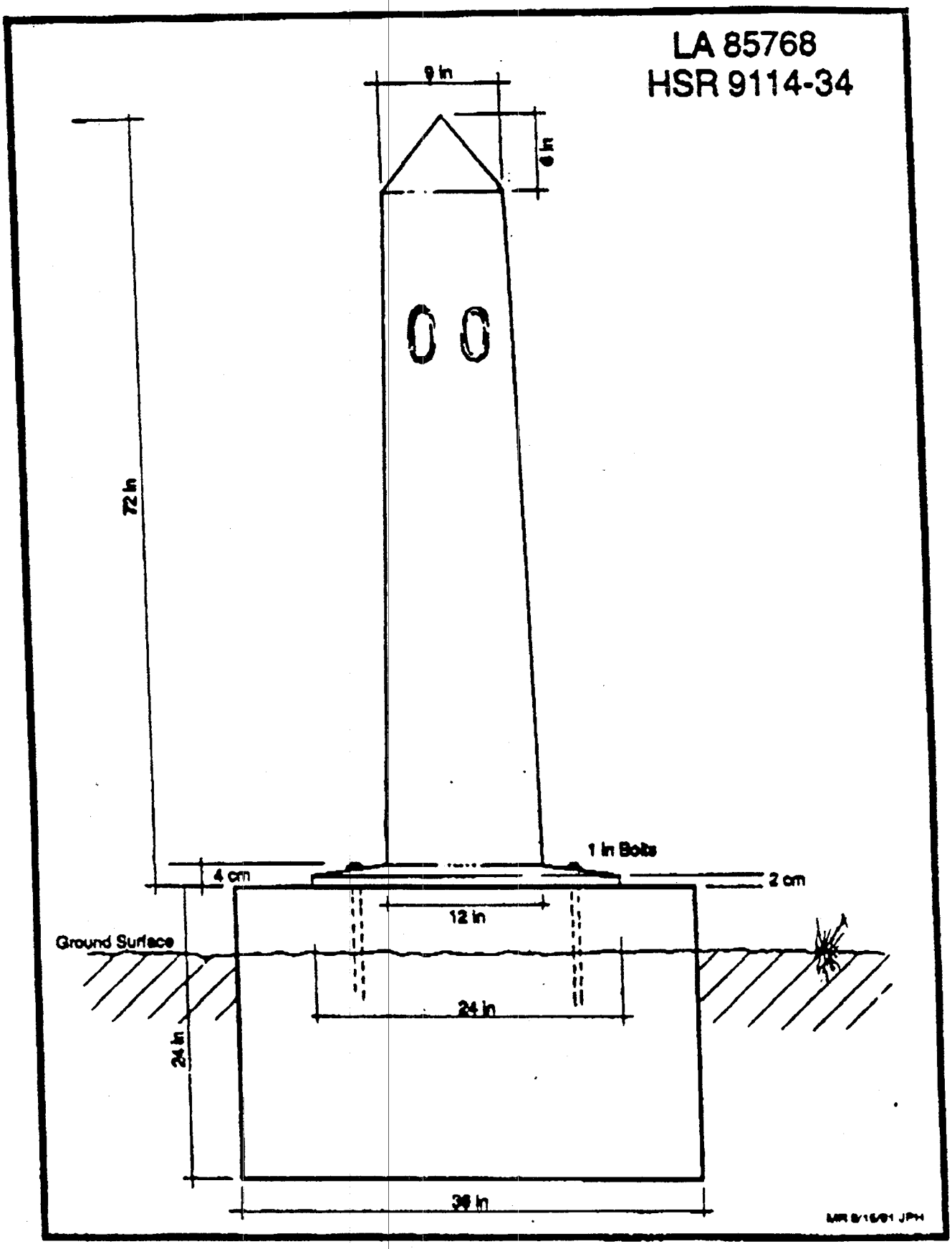
LABORATORY OF ANTHROPOLOGY, MUSEUM OF NEW MEXICO
ARCHAEOLOGICAL SITE SURVEY FORM

LA NO.: 85768
SITE NAME: The International Border
OTHER INST. No.: HSR 9114-34
I.O.: No
UTM: ZONE: 13 E 355350 N 3517290} eastern end at Texas-New Mexico border
ZONE: 12 E 764410 N 3519640} at Monument 40
ZONE: 12 E 765670 N 3469720} at Monument 53
ZONE: 12 E 685580 N 3467880} at Arizona border (Monument 71)

LEGAL DESCRIPTIONS:

Township/Range	Section	Owner	7.5 min. Quadrangle	Date
T29S-R4E	15	private	Smeltertown	1955
	16	private	"	
	17	BLM & private	"	
	18	private	"	
T29S-R3E	13	BLM	"	
	14	BLM	"	
	15	BLM	Smeltertown/Strauss	
	16	State of NM	Strauss	1955
	17	BLM	"	
	18	BLM	"	
T29S-R2E	13	BLM	"	
	14	BLM	"	
	15	BLM	"	
	16	State of NM	Strauss/Noria	
	17	BLM	Noria	1985
	18	BLM	"	
T29S-R1E	13	BLM	"	
	14	BLM	"	
	15	BLM	"	
	16	State of NM	"	
	17	BLM	"	
	18	BLM	Noria/Potrillo	
T29S-R1W	13	BLM	Potrillo	1985
	14	BLM	"	
	15	BLM	"	
	16	BLM	"	
	17	BLM	"	
	18	BLM	"	
T29S-R2W	13	BLM	Potrillo/Mount Riley SE	
	14	BLM	Mount Riley SE	1985
	15	BLM	"	
	16	State of NM	"	
	17	BLM	"	
	18	BLM	"	
T29S-R3W	13	BLM	"	
	14	BLM	Mount Riley SE/Guzman's Lookout Mountain	
	15	BLM	Guzman's Lookout Mountain	1985
	16	State of NM	"	
	17	BLM	"	
	18	BLM	"	

LA-5428


LA 85768
HSR 9114-34
9 in
6 in
72 in
1 in Bolts
4 cm
2 cm
12 in
Ground Surface
24 in
24 in
36 in
MR 8/16/01 JPH

LA 85768

T29S-R4W	13	BLM	"	
	14	BLM	"	
	15	BLM	"	
	16	State of NM	Guzman's Lookout Mountain/Camel Mountain	
	17	BLM	Camel Mountain	1965
	18	BLM	"	
T29S-R5W	13	BLM	"	
	14	BLM	"	
	15	BLM	"	
	16	State of NM	"	
	17	BLM	Camel Mountain/Coyote Hill	
	18	BLM	Coyote Hill	1966
T29S-R6W	13	BLM	"	
	14	BLM	"	
	15	BLM	"	
	16	State of NM	"	
	17	BLM	"	
	18	BLM	Coyote Hill/ Columbus SE	
T29S-R7W	13	BLM	Columbus SE	1966
	14	BLM	"	
	15	BLM	"	
	16	BLM	"	
	17	BLM	"	
	18	BLM	"	
T29S-R8W	13	private	"	
	14	private	Columbus SE/ Columbus	
	15	private & BLM	Columbus	1965
	16	State of NM	"	
	17	private	"	
	18	private & State of NM	"	
T29S-R9W	13	BLM	"	
	14	BLM	"	
	15	BLM	Columbus/Malpais Hill	
	16	private	Malpais Hill	1965
	17	private	"	
	18	private	"	
T29S-R10W	13	private	"	
	14	private	"	
	15	private	"	
	16	private	Malpais Hill/ Hermanas	
	17	private	Hermanas	1964
	18	private	"	
T29S-R11W	13	State of NM & BLM	"	
	14	BLM	"	
	15	BLM	"	
	16	State of NM	"	
	17	BLM	"	
	18	BLM	Hermanas/Victorio Ranch SE	
T29S-R12W	13	BLM	"	
	14	BLM	Victorio Ranch SE	1964
	15	BLM	"	
	16	State of NM	"	
	17	BLM	"	

030-542

LA 85768

	18	BLM	"	
T29S-R13W	13	BLM	Victorio Ranch SE/ Victorio Ranch	
	14	BLM	Victorio Ranch	1965
	15	BLM	"	
	16	State of NM	"	
	17	BLM	"	
	18	BLM	"	
	19	BLM	"	
	30	BLM	Victorio Ranch/Double Wells	
	31	BLM	Double Wells	1983
T30S-R14	1	BLM	"	
	12	BLM	"	
	13	BLM	"	
	24	BLM	"	
	25	BLM	"	
	36	BLM	"	
T31S-R14W	1	BLM & State of NM	"	
	12	State of NM & BLM	Double Wells/ Cabin Wells	
	13	State of NM	Cabin Wells	1983
	24	State of NM	"	
	36	State of NM	"	
T32S-R14W	1	BLM	"	
	12	BLM	"	
	13	BLM	"	
	24	BLM	"	
	25	State of NM & BLM	Cabin Wells/ Campbell Well	
	36	State of NM	Campbell Well	1983
T33S-R14W	1	private	"	
	12	"	"	
	13	"	"	
	24	"	"	
	25	"	"	
T34S-R14W	1	"	"	
	12	"	Campbell Well/ Corner Well	
	13	"	Corner Well	1983
	24	"	"	
	23	"	"	
	22	"	Corner Well/ Dog Mountains	
	21	"	Dog Mountains	1983
	20	"	"	
	19	"	"	
T34S-R15W	24	private	"	
	23	private & BLM	"	
	22	BLM	"	
	21	BLM	Dog Mountains/ Eagle Mountain	
	20	BLM	Eagle Mountain	1983
	19	BLM & private	"	
T34S-R16W	24	private	"	
	23	private	"	
	22	private	"	
	21	private	"	
	20	private	"	
	19	private	Eagle Mountain/	

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			Whitewater Mountains	
T34S-R17W	24	private	Whitewater Mountains	1983
	24	private	"	
	23	private	"	
	22	private	"	
	21	private	"	
	20	private	"	
	19	private	"	
T34S-R18W	24	private	Whitewater Mountains/ Whitewater Creek	
	23	private	Whitewater Creek	1983
	22	"	"	
	21	"	"	
	20	"	"	
	19	"	"	
T34S-R19W	24	private	"	
	23	"	Whitewater Creek/ Lang Canyon	
	22	"	Lang Canyon	1983
	21	"	"	
	20	"	"	
	19	"	"	
T34S-R20W	24	private	"	
	23	"	"	
	22	"	"	
	21	"	Lang Canyon/ Guadalupe Pass	
	20	"	Guadalupe Pass	1983
	19	"	"	
T34S-R21W	24	private	"	
	23	"	"	
	22	"	"	
	21	"	"	
	20	private	Guadalupe Pass/ Guadalupe Canyon	
	19	private	Guadalupe Canyon	1985
T34S-R22W	24	BLM	"	
	23	BLM	"	

UNPLATTED: No
GRANT: No
OWNER & ADDRESS: See above
*MAP REFERENCE: See above
DATES: See above
SCALE: All are 1:24,000-7.5 min.
COUNTIES: Dona Ana, Luna, Hidalgo
STATE: New Mexico
NEAREST NAMED DRAINAGE: See remarks
LOCATIONAL DESC. & RECOGNIZED LANDMARKS: The three segments of the New Mexico International Border are located as follows:
Monument 1-40: Where the Rio Grande intersects parallel 31 degrees 47 min. N, near Smeltertown, Texas, then 160 km (100 mi) west to the Sierra Rica.
Monument 40-53: South from Monument 40, 58 km (36 mi) to parallel 31 degrees 20 min. N, south of Corner Well
Monument 53-71: West from Monument 53, 77 km (48 mi) to the New Mexico-Arizona border, south of Guadalupe Canyon and north of La Vinatita.
SITE TYPE: Fence, road, historic trash scatter
SITE SIZE: Length 184 mi (296.12 km) Width 60 ft (18.3 m)
ELEVATION (FT): The lowest point is 3,735 ft at the Rio Grande; the highest

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point is 6,645 ft at Monument 65 on the Continental Divide in the San Luis Mountains.
TOPOGRAPHIC SETTING (LOCATION & ACCESS): The topography includes the perrenial Rio Grande, Mesilla Valley, large coppice dune fields, broken basalt lava flows, alkali playas and claypans, gravelly ridges, broad arid valley bottoms in closed drainage basins, and small mountains and hills to very rugged mountain ranges. Access is through a variety of county and ranch roads to the border road except along most of the southern extent of the New Mexico boot heel, where vehicular access is impossible in the mountainous terrain.
TOPOGRAPHIC SETTING:
SLOPE: In general, most of the border is on a slope that drains from New Mexico into Mexico.
ASPECT: Variable
EXPOSURE: Variable
LOCAL VEGETATION: See remarks
ECOLOGICAL ZONE: Desertscrub, grassland, woodland
SOIL TYPE: See remarks
LOCAL OUTCROPS: See remarks
NATURE AND DEPTH OF FILL: See remarks
ARCHAEOLOGICAL STATUS: Portions of the International Border (approximately 3 mi [4.8 km]) between Range 2 and 3 E, Township 29 S, Sec. 13, 17, and 18 were surveyed in 1984 during the Santa Teresa Study Area Project (Ravesloot 1988). Collections also were made and housed at the Centennial Museum, University of Texas at El Paso, El Paso, Texas. Other surveys within and adjacent to this area include a Bureau of Land Management inventory and excavations in 15,591 acres adjoining 4 mi (6.4 km) of the border (Camilli et al. 1988); the Santa Teresa International Border crossing, approximately 2.75 mi (4.4 km) along the border (Stuart 1990). An inventory of archaeological resources has been performed on the Chihuahua side in the same crossing area (Caraveo, personal communication 1992). Historic events and resources are reported within this form. The present work includes an 60 ft (18 m) pedestrian transect along most of the U.S. side of the fence (Figure 1), photographs, analysis of all observed historic artifacts and features, and collection of time-diagnostic artifacts.
NATIONAL AND/OR STATE REGISTER STATUS: The informal opinion of project personnel is that this site may be eligible for the state and/or national registers.
BLM SITE TYPE: Category 2
CONDITION OF SITE: Varies along different segments, see remarks
MITIGATION/RECOMMENDATION: Selective avoidance, see remarks
SURVEYED FOR: U.S. Army Corps of Engineers
RECORD FORM: Survey form, photos
LOC. OF FORMS, MAPS, PHOTOS: Human Systems Research, Inc.
SURFACE AND/OR SUBSURFACE COLLECTIONS: YES
STRATEGY: Museum quality and temporally diagnostic artifacts
LOCATION OF COLLECTED ARTIFACTS: Human Systems Research, ultimately Museum of New Mexico
PREVIOUS COLLECTIONS: Yes
WHEN: Summer/Fall-1984
REPOSITORY: Centennial Museum, University of Texas at El Paso
IS THERE ANOTHER SITE CLOSE BY? Yes
LA OR FIELD NO.: LA nos.: 72901, 85076-85079, 85741-85761, 85764-87566, 85769-85783, 85786-85788, 85790-85791, 85793, 85797, 85798, and 100,706-100,708 are all intersected by the International Border.
MAXIMUM ARTIFACT DENSITY: See remarks
ESTIMATED TOTAL ARTIFACTS: See remarks
TIME DIAGNOSTIC ARTIFACTS: Military cartridges, glass and can artifacts, individual monuments
NO. OF TEMPORAL COMPONENTS 3
TEMPORAL COMPONENT (1)
FEATURES: Barbed-wire fence, two-track road and associated monuments

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CULTURE: Anglo/Hispanic
PERIOD: U.S. Territorial
SITE FUNCTION: Geopolitical boundary between the United States and Mexico
BEST DATE: Established in 1854-1855
METHOD OF DATE: Ratification of the Gadsden Treaty and the subsequent survey and monumentation by the Emory/Salazar y Larregui expedition in 1854-55

TEMPORAL COMPONENT (2)
FEATURES: Barbed-wire fence, two-track road, associated monuments and historic artifacts
CULTURE: Anglo/Hispanic
PERIOD: Statehood/WWII
SITE FUNCTION: Geopolitical boundary between the United States and Mexico, military, Border Patrol, and ranching activities
BEST DATE: 1912-1945
METHOD OF DATE: Cartridges, cans, glass, and metal artifacts

TEMPORAL COMPONENT (3)
FEATURES: Barbed-wire fence, two-track road, associated monuments, and historic features and artifacts
CULTURE: Anglo/Hispanic
PERIOD: WWII to the present
SITE FUNCTION: Geopolitical boundary between the United States and Mexico, military, Border Patrol, mining, and ranching activities
BEST DATE: 1945 to the present
METHOD OF DATE: Cartridges, glass, can, and metal artifacts

PUBLISHED REFERENCE
DATE: 1993
INSTITUTION: Human Systems Research, Inc., Tularosa
AUTHOR AND TITLE: Human Systems Research Staff/The Joint Task Force-6 Border Survey
FIELD RECORDER: Sergio Mendez, Mark Sechrist, Cody Browning, Morgan Rieder, Leonard Allen, Allen Rorex, Dorothy Webb, Barbara Staley, Jeff Leach
DATE: 9/11/91
LAB RECORDER: Cody Browning, Mark Sechrist, Dorothy Webb, Morgan Rieder
DATE: 11/20/91
REMARKS:

Site LA 85768 (HSR 9114-34) is the New Mexico segment (with Chihuahua and Sonora) of the United States-Mexico International Border. It extends from the Texas-New Mexico border at the Rio Grande on the east, to Monument 71, the Arizona/New Mexico state line on the west, a distance of approximately 184 mi (294 km). This segment lies within Dona Ana, Luna, and Hidalgo counties and passes through a variety of desert and semidesert landscapes. In general, most of it lies within the Chihuahuan Desertscrub biotic community until it turns west at Corner Well (Figure 1), where it leaves the Chihuahuan biome (Schmidt 1979), and passes, for the remainder of the New Mexico segment, through the Madrean biome (Brown 1982).

The desertscrub community includes predominantly mesquite, creosotebush, four-wing saltbush, tarbush, and Yucca elata, with a number of associated species in more localized settings, including sand sage, rabbitbrush, broom snakeweed, sotol, ocotillo, crucillo, broom dalea, turpentine bush, Mormon tea, range ratany, shrubby buckwheat, scrub oak, sacahuista, algerita, tomatillo, bee brush, Yucca baccata, acacia, desert willow, crucifixion thorn, Condalia sp, sumac, isolated juniper, Agave palmeri, Opuntia sp, Echinocereus sp, grama grasses, mesa dropseed, fluffgrass, muhly grasses, tobosa, alkali sacaton, three-awn, galleta grass, six-week schismus, slim tridens, Russian thistle, desert holly, mariola, and wolftail. A number of annual species were observed during the wet summer of 1991, including spectacle pod, threadleaf groundsel, desert marigold, and desert rhubarb. The Madrean biome in most of the boot heel

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is marginal to the evergreen woodland/chaparral of its more southerly heartland, except in the Guadalupe Mountains, which have a true woodland (Brown 1982). This semiarid area is vegetated by denser stands of grama and awn grasses, yucca, juniper, sacahuista, and sumac; however, desertscrub species are not excluded, and in some areas, they are even dominant. The woodland species include pinon, juniper, oak, mountain mahogany, evergreen sumac, turpentine bush, velvet mesquite, and Yucca schottii (Humphrey 1987).

From Monument 1 at Smeltertown, the International Border proceeds exactly 100 mi (160 km) west to Monument 40. Within this stretch, it passes through a variety of landscapes and by a variety of features, which include the Sierra de Cristo Rey, the Mesilla Bolson--an open plain west of the Rio Grande, the southern Potrillo volcanic field, Camel Mountain, the Palomas Bolson (Columbus Valley), the Carrizalillo Hills, the northern footslopes of the Sierra de los Moscos, Wamel's Draw--an intermontane valley, and the Sierra Rica. At Monument 40, the Border turns south for approximately 36 mi (57.6 km) to Monument 53. This stretch is dominated by the Sierra Rica, Hachita Valley, the lower alluvial plain of the Big Hatchet and Alamo Hueco Mountains, and small, isolated mountains at the southern extreme (Cerro el Indio). From this point, the Border again heads west to the Arizona line some 48 mi (76.8 km) distant. This stretch is dominated by the Dog Mountains, southern Playas Valley, the Whitewater and San Luis Mountains, Animas Valley, and, finally, the Guadalupe Mountains. The border passes through only one developed community, Palomas, Chihuahua, which abuts the border fence a few miles south of Columbus, New Mexico.

Historically, the International Border has a very dramatic and colorful past. Its placement was confounded several times due to mapping errors and the different desires of the governments of Mexico and the United States. Before the Gadsden Purchase of 1854, the province of Nuevo Mexico was a vaguely defined ellipse of settlements extending up the Rio Grande. Its southern boundary was said to be at a point along the Rio Grande north of "El Paso" (present-day Ciudad Juarez). The treaty of Guadalupe Hidalgo in 1848 defined the first U.S. version of the boundary location. The terms of the treaty were based on a map of Mexico published by John Disturnell in 1847, which indicated that the boundary began at the Rio Grande 8 mi (12.8 km) north of El Paso, then due west 3 degrees of longitude, due north until it intersected the Gila River, then following the Gila westward. After a meeting of the joint commissioners and surveyors to establish the line on the ground, it was determined that the Disturnell map was grossly in error, placing El Paso 100 mi (160 km) east and 34 mi (54 km) north of its actual location. The two parties settled on a compromise that gave Mexico the fertile Mesilla Valley and the U.S. the Santa Rita mines in the mountains (Figure 2). This agreement was respected by both countries for six years. However, U.S. hopes for a southern railroad route were precluded by this plan because it did not include the open plains south of the Santa Rita country, so Congress repudiated the compromise. In response, James Gadsden took five purchase proposals to present to Mexican President Santa Anna. All were very ambitious in the desire for economically important land, but none were accepted. Gadsden eventually achieved the least of his goals by purchasing enough land for a suitable rail route, and in 1854, the Gadsden Treaty was ratified (Rittenhouse 1965).

The Gadsden Treaty placed the International Border on the Rio Grande at 31 degrees 47 min. N latitude, then 100 mi (160 km) due west, then south to 31 degrees 20 min. N, and west to the 111th meridian, which is in present-day Arizona (Walker and Bufkin 1986, The Tate Gallery 1967, Rittenhouse 1965). Its current position on the landscape was originally surveyed under the direction of American commissioner William H. Emory and

Mexican commissioner Jose Salazar y Larregui in 1854 and 1855. They erected a series of rough stone monuments at irregular intervals. Three permanent masonry monuments were also built, which still stand as Monuments 40, 46, and 53. Other monuments were erected by commissioner Salazar y Larregui to fill in between some of the widely spaced monuments (Emory 1857). The Emory expedition accomplished much more than marking the boundary on the ground. Natural historians accompanied the expedition to sketch, analyze, and collect specimens of the geographic setting, flora, and fauna from this new territory. The results provide an impressive compendium of data (Emory 1857). No material remains other than the three monuments of the Emory expedition were observed during the 1991 archaeological survey. The boundary was resurveyed in 1892 by J.W. Barlow to re-establish and repair Emory and Salazar y Larregui's original work (Ames 1977). Barlow's task was to establish additional permanent markers along the line, which brought the total number of monuments for the New Mexico segment up to 71. Aside from a few additional, more visible masonry monuments, the Barlow expedition erected 55 multi-piece cast iron monuments, which, when completed, weighed 710 pounds each (Senate Document no. 247, 1848). Table 1 presents the monuments' numbers, types, and locations and Figure ___ shows the standard iron monument style. The task of transporting materials and enduring construction conditions in the open desert was undoubtedly formidable.

Two areas contain trash dating to the period of Barlow's expedition. One scatter lies at Monument 40, which was Emory's Monument 8, the point where the border turns southward from the 31 degree 47 min. line. Barlow dismantled it, then rebuilt it at its present location when it was found to be about 1 mi (1.6 km) too far east. An archival photograph shows a work crew with tents in the background re-erecting Monument 40. A second trash scatter lies at Monument 53, which is the point where the border turns west again. These two sites are reported separately (LA 100,707 and LA 100,708).

The International Border was the scene of a highly volatile period during the Mexican Revolution of 1910-1920, the invasion of New Mexico by Francisco "Pancho" Villa in March of 1916, and increased security during World War I. Relations between the United States and Mexico were extremely strained, which resulted in the deployment of some 110,000 National Guard troops along the Border in June 1916. This number would increase by September, in support of General Pershing's Punitive Expedition into Mexico (Hall and Coerver, 1988:74). By 1924, the International Border was much quieter and began to be patrolled by the newly organized United States Border Patrol. Originally part of the Immigration and Naturalization Service (INS), the Border Patrol, formed in 1890-91, became a separate entity and began its role as the guardian and keeper of the United States International Borders in 1924 (Sandy Hise, personal communication 1993). Since that time, the International Border has been relatively stable, politically, and adjacent areas have been developed for ranching and mining-related activities.

The majority of the Border easement was archaeologically surveyed in 1991 and 1992 (Figure 1). For the purpose of recording the International Border, the monuments, fence, road, other historic features, and all historic artifacts within the 60 ft International Boundary and Water Commission (IBWC) right-of-way were considered part of the "border site," with three exceptions. The exceptions include a Bureau of Animal Industry (USDA) line rider's cabin (LA 100,706), the trash scatter at Monument 40 (LA 100,707), and the trash scatter at Monument 53 (LA 100,708), which were recorded as individual sites. In general, the artifact assemblage consists of military and civilian firearms cartridges, glass, can, and other metal artifacts (see Table 1). By far the most frequent artifact type associated

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with the International Border is firearms cartridges. The oldest of these are three military cartridges headstamped "86" and "87" and manufactured by the Frankford Arsenal in 1886 and 1887. One is a .45-70 caliber and the other two are .44-40 caliber. Because there was no fence between the monuments at that time, the nationality/ethnicity of whoever left these cartridges behind is uncertain. Some 85 cartridges dating between the turn of the century to the present were observed, probably the result of many episodes of border activity. A large percentage of these cartridges are of military manufacture and date to between 1900-1920. These artifacts probably represent the above-mentioned American military activity along the Border during the Mexican Revolution. However, it should be noted that the general public has access to military surplus and that many of these cartridges may have been reloaded and fired much later in time. Certainly, many of the observed cartridges are the result of recent hunting, Border Patrol, and other law enforcement activities. For future archaeological reference, a burned and bullet-riddled 1980s vintage Chevrolet Suburban lies a few meters south of the border fence near Monument 10.

Numerous water wells near the border were locations for military encampments during the Mexican revolutionary period, as indicated by a 1919 War Department map. This was verified by the recording of period military artifacts at seven sites during the survey: Birchfield Ranch (LA 54880), Doyle's Well (LA 85789), Cabin Wells (LA 72901), Corner Well (LA 85793), Dog Spring (LA 54052), Alamo Hueco (LA 54053), and Antelope Wells (LA 100,528; Figure 1).

Fencing along the parallel 31 degrees 47 min. appears to be maintained by individual ranchers in the area. A seven-strand barbed-wire and steel-post fence runs the remainder of the Border from Monument 40 south, then west to the Arizona border. It has 16 diagonally braced stretch posts cemented into the ground each mile, and, except where purposely breached, it is in excellent condition. Fencing projects were begun in the mid-1940s, sponsored by the International Boundary Commission, to contain an outbreak of hoof-and-mouth disease among cattle in Mexico. A variety of fence types were constructed along the border through New Mexico, Arizona, and California. Responsibility for the fence was transferred to the Department of Agriculture in the early 1950s (Cruz Ito, personal communication 1993).

Line riders also were hired to patrol the border during outbreaks of hoof-and-mouth disease to kill any cattle crossing into the U.S. (Arthur T. McCall, personal communication, 1991; see also LA 100,706). They patrolled on horseback, either singly or in pairs, for 8- to 12-mi (13 to 19 km) stretches during two outbreaks, from 1948 to 1952 and again from 1953 to 1956. They carried their own rifles, which may account for the variety of calibers of cartridges found along the Border.

A rather poignant feature along the border is a weathered cement memorial marker just north of Monument 48, on the alluvial plain next to the Laguna de los Moscos, which reads:

> "Frank Evans Born June 12 1865 Killed Here May 1 1907 In Cold Blood by a crazy cook with a ax. Mark by death Aug 16 1917 Witness by Johnie Freeman. Frank was a good...."

No further information is available on other aspects of Frank Evans' life. Based on the time period of this occurrence and the reference to the cook, it appears that Evans was probably a cowhand for a local ranch on one

or the other side of the border.

Today, the New Mexico segment of the International Border is composed of 71 monuments within New Mexico, an intermittently dilapidated and spliced fence, and a two-track road along most of the United States side, which in many places is eroded to impassability or concealed by drifting sand. The 60-ft easement controlled by the International Boundary and Water Commission allows for maintenance of the fence and road. Additional information in the form of archival research may further illuminate the meaning of materials from the archaeological survey. Historical accounts of the United States' involvement in the Mexican Revolution could provide additional data on areas along the International Border where U.S. cavalry and infantry were camped or where manuever areas were used. Historical data on the activities of the U.S. Border Patrol would yield information from the early part of this century to the present. The Border is, of course, still an area of diverse activity, from farming and ranching to controlling travel and commerce between the United States and Mexico. Illegal border activities are evident from the number of segments where the fence has been breached. Personal accounts of drug smuggling and immigration, livestock theft, armed personal theft, as well as friendly relations among neighbors on both sides of the Border, were provided by local farmers, ranchers, law enforcement agents, and HSR archaeologists.

The informal opinion of the researchers is that this site is potentially eligible to the national and state registers of historic places. Avoidance is recommended for the three notable loci mentioned above, and the prehistoric archaeological sites intersected by the border. Because all of the other artifacts associated with the border were either field analyzed or collected, clearance is recommended for those segments between the avoidance areas for road and fence maintenance.

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Table 1. Monument Styles, Dates*, and UTM Locations.

No.	Date erected	Style	UTM: Zone 13 Easting	Northing	Comments
1	Jan. 31, 1855	masonry			Five ft beneath foundation is message in bottle signed by both commission parties
2	1855	masonry			
3	1855	masonry			
4	1892	iron			
5	1892	iron			
6	1892	iron			
7	1892	iron			
8	1892	iron			
9	1892	iron			
10	1892	iron			
11	????	masonry			
12	1892	iron			
13	1892	iron			Original monument disappeared prior to 1984, has since been replaced by Monument No. 13R, sometime between 1984-1991
14	Sept. 27 or 28 1892	iron			
15	????	masonry			
16	1893	iron			
17	1892	iron			
18	1893	iron			
19	1892	iron			
20	1892	iron			
21	1892	masonry			
22	1892	iron			
23	1892	iron			
24	1892	iron			
25	1892	iron			
26	1892	masonry			
27	1892	iron			
28	1892	iron			
29	1892	iron			
30	1892	iron			
31	1892	iron			Carrizalillo Hills
32	1892	masonry			"
33	1892	masonry			Carrizalillo Hills, west side
34	1892	iron			
35	1892	iron			
36	1892	iron			

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Table 1. Monument Styles, Dates*, and UTM Locations (cont.).

No.	Date erected	Style	UTM: Zone 13 Easting	Northing	Comments
37	1892	iron			
38	1892	iron			
39	1892	iron			Sierra Rica
40	1855	masonry			originally Emory's Monument 8, found to be 1.6 km (1 mi) too far east, taken down and re-erected in 1893, marks turning point 100 mi (160 km) west of Paso del Norte
41	1892	iron			Sierra Rica
42	1892	iron			
43	1892	iron			
44	1892	iron			
45	1892	iron			Bachita Valley
46	1855?	masonry			reconstructed in 1893
47	1892	iron			
48	1892	iron			
49	1892	iron			
50	1892	iron			
51	1892	iron			
52	1892	iron			
----------					all iron monuments to this point completed prior to November 1892
53	1855	masonry			original by Emory, marks the southeast corner of the New Mexico boot heel, reconstructed in 1893
----------					all remaining monuments erected between June 16, 1893, and September 19, 1893
54	1893	iron			
55	1893	iron			Dog Mountains
56	1893	iron			
57	1893	iron			
58	1893	iron			
59	1893	iron			
60	1893	iron			Antelope Wells
61	1893	iron			Playas Valley
62	1893	iron			
63	1893	iron			
64	1893	masonry			

Table 1. Monument Styles, Dates*, and UTM Locations (cont.).

No.	Date erected	Style	UTM: Zone 13 Easting	UTM: Zone 13 Northing	Comments
65	1893	masonry			6,719 ft elevation Continental Divide
66	1893	masonry			Animas Valley
67	1893	masonry			"
68	1893	iron			"
69	1893	iron			Guadalupe Mountains
70	1893	iron			Arizona border
71	1893	iron			

*All indicated in Raphuny (1968).....